The Builder.

No. CXXXII.

SATURDAY, AUGUST 16, 1845.

HER Majesty's visit to Germany will probably lead even a greater number of our countrymen to travel to the banks of the swift Rhine in the present year than usual, large as that number always is. To those who know any thing of architectural history, and have sufficient knowledge of styles and dates to read and enjoy old buildings, Belgium, the Netherlands, and Germany, offer extraordinary attractions. It is greatly to be regretted, that comparatively few of our tourists know any thing about the matter, notwithstanding the subject now occupies much more attention in England than was the case a dozen years ago. They visit the cathedrals, and churches, and castles, both at home and abroad —they are amused and interested; but the instruction which these buildings offer, the information that they silently convey, is in a cipher to which they have not the key, and so is lost to them.

The delight of travel is increased four-fold by a knowledge of architectural history,—we speak for a few minutes to such of our non-professional readers only as may not have this knowledge,—and we advise all who would derive the fullest advantage from their summer rambles, and the greatest amount of pleasure, to apply themselves to acquire it. Every old building is an open book, which may be understood without difficulty by those who know the language: it tells you when it was erected, very often the state of society at that period; at which end it was begun, at what time alterations were made. You find it to be a stage in a progress,—a part of a whole, and can see clearly what preceded it and what it led to. Architecture, as a fine-art, should form part of general education; and, indeed, probably will before long. We once heard an educated friend, who had made the grand tour, inquire the difference between classic and Gothic architecture, and have often found men who have stood in the Athenian Acropolis and wintered in Rome, who yet did not know the Doric order from the Corinthian, and had not the most remote idea that a connection exists between the structures of Greece and Rome, and the cathedrals of the middle ages on this side of the Alps; still less, that the differences between them, now so strikingly apparent, can be traced step by step, and explained.

Such ignorance in other branches of knowledge would be considered disgraceful; but in this it is not so, being almost universal: further, these very men, with others *equally* well informed, and not better, will never scruple to sit in committees, to decide on the merit of designs submitted to them in competition by foolishly confiding architects and speculating charlatans. Let this pass, however, being simply a parenthesis, and return to our tourists.

Antwerp, where the Queen landed, is full of interesting matter. The wood-carving in some of the churches is admirable; the iron-work over the well near the cathedral will give a lesson as to the modern working in metal, not to mention the cathedral and other buildings (duly set forth in the guide-books), which furnish a rich treat.

Bruges and Malines afford many remarkable specimens of domestic architecture of various periods, besides churches curiously illustrative of architectural history. An air of stateliness and by-gone consequence, tinged with the melancholy traces of modern decay, characterizes these and other of the Flemish towns, and gives rise to peculiar emotions and instructive musings. The change from buildings intended for defence to those wherein convenience and comfort were alone studied, may be every where traced; while the growth of the third estate is brought to mind by the belfry and *hotel de ville*, found in each town. A bell to call the people together, and a place for them to meet in, were amongst the earlier requirements when they first discovered that union was strength, and began to feel their own importance. Ghent, Louvain, and Brussels give fine examples of these town halls. In the first-named town there are further illustrations of the progress of domestic architecture for those who have "eyes to see."

Germany, especially the southern parts of it, contains a large number of early and interesting specimens of what has been called the Romanesque architecture, as well as many noble and well-known examples of the pointed style. We should ourselves rather coin a word, and call the former *Byzantineseque*, if not Byzantine; their resemblance to the buildings of the lower Greek empire being strikingly apparent. No one can visit Santa Maria of the Capitol, the Church of the Apostles, or St. Gereon's, all in Cologne, without this conviction.

The first-named church is one of the most ancient in the city. It consists of nave and side aisles (separated by rectangular piers and plain semicircular arches),* transept terminated north and south by a semicircular absis, crowned by a hemispherical dome, and a choir with similar absis at east end. An aisle is formed around the absides by columns and semicircular arches. These columns have enormous cushion capitals, and diminish in diameter from the bottom towards the top. They would seem originally to have been rectangular piers, and afterwards worked into their present form.

Externally, St. Mary's is a rude type of most of the churches to be found in Cologne. It is, unfortunately, so far decayed and otherwise injured, as to be literally bound together, in parts, by iron bars introduced for that purpose.

Hope remarks of the Apostles' Church, begun in 1021, that on beholding the east end of it, immediately after entering the ancient gates of Cologne, he almost thought himself at Constantinople.

St. Martin's Church has internally the Greek distribution. Externally it has a fine square tower with four lesser towers at the angles. Of the Cathedral, a construction of a later date than those last named, we must not now speak. The circumstances which attended the discovery of the original drawings, the restorations which have been effected, the way in which the works are done, may afford us matter for some observations hereafter. Cologne has been called the Rome of this side of the Alps, and deserves the title. At Bonn, the cathedral is exceedingly interesting: part of it perhaps belongs to the time of the Empress Helena.

The castles on the banks of the Rhine would well pay for investigation, analysis, and classification; at present we know little of them.

* The archways are 9 feet wide, and about 22 feet high to the springing of the arch. Each pier is 6 feet 3 inches wide on the face.

At Aix-la-Chapelle, where the queen stopped the great church has many peculiarities. The church originally built by Charlemagne was destroyed, but was rebuilt in the tenth century. The æra of Charlemagne (in the eighth and ninth centuries), produced many fine buildings, and materially influenced the progress of architecture and the other arts; he drew from the Grecian empire artificers and artists of all kinds, and brought wholesale from Italy materials to decorate his new buildings. Our object, however, when we began this notice was simply to urge on tourists the advantage of obtaining a knowledge of architectural history and the characteristics of style. We must leave for some other opportunity the pleasant task of discussing the progress of the art in Germany.

BRITISH ARCHÆOLOGICAL ASSOCIATION.

HAVING briefly mentioned the proceedings at Winchester in our last number, we now place before our readers notes of some of the papers which are more immediately connected with our subject. We would premise, however, that the president's address was exceedingly judicious.

"All party-feeling," said his lordship, "ought to fade away before true archæologists. The science we profess ought to shew to man the vanity of his position. The knowledge of the existence of many a prince and king, on whose word the lives of thousands depended, has only been brought to us by the researches of some student in charters, or the decipherer of inscriptions upon coins. I may quote the poet in illustration—

> Ambition sigh'd, she found it vain to trust
> The faithless column and the crumbling bust;
> Huge moles, whose shadows stretch'd from shore to shore,
> Their ruins perish'd and their place no more!
> Convinced, she now contracts her vast design,
> And all her triumphs shrink into a coin!

Nay more, ladies and gentlemen, when we look at the record of past ages, ought we not to recollect that their virtues or their errors have only been gathered from their tombs? Antiquarianism is not then the narrow pursuit its detractors would imply; the true antiquary marks the progress of races and institutions, and draws a lesson from the past. Is it not worthy of us to reflect on the history of our nation, and of mankind? It will not have been in vain, then, that the Archæological Association has been established, as affording matter for the graver studies, and giving food for superior minds."

Mr. Pettigrew, in his paper on the objects of antiquarian researches took up the same theme:—"Only a few years since," said he, "and the very mention of an object of antiquity called for the shafts of ridicule;—attempts to illustrate an ancient inscription, decipher a charter, or explore a ruin, were treated with indifference, if not contempt. Poets lent their aid to this effect:—

> 'With sharpen'd sight pale Antiquarians pore,
> Th' inscription value, but the rust adore.'—POPE.

"Curiosities now," says Feltham, "ought not to be neglected, especially antiquities; for these shew us the ingenuity of past ages, and include in them both example and precept. By comparing these with modern inventions we may see how the world improves in knowledge." Shakspere, that great master of the human heart and mind, was sensibly alive to the value of antiquities of all kinds. How beautifully in his Twelfth Night he makes the Duke to say to Viola as Cæsario in disguise—

> 'No, good Cæsario, but that piece of song,
> That old and antique song we heard last night.'

And again—

> 'O, fellow! come; the song we heard last night;
> Mark it, Cæsario; it is old and plain:
> The spinsters and the knitters in the sun,
> And the free maids that weave their thread with bones,
> Do use to chaunt it: it is silly, sooth,
> And dallies with the innocence of love;
> Like the old age.'

It is easy to throw ridicule upon any science; and antiquities have received their full share—perhaps not altogether unjustly bestowed. The time for poring over old grave-stones has, however, gone by; antiquarian researches have taken a higher stand, and the ardour with which ancient MSS. have been sought out, perused, and submitted to the public of late, promises most favourably for the development of the habits and customs of past ages. When we consider the mutual relations which connect all departments of learning, and the variety of knowledge requisite to form the true antiquary, the acquaintance necessary with heraldry, genealogies, inscriptions, monuments, numismatics, languages, etymologies, history, &c., we immediately see the importance of an association of many individuals, who by their joint labour are able to illustrate the progress of art, display the habits and customs, and elucidate the events and things of past ages."

The early history of the Society of Antiquaries as sketched by Mr. Pettigrew, may interest some of our readers. The Society of Antiquaries of London was incorporated in 1751, but there was a society of gentlemen in London, as early as 1572, who were in the habit of meeting to pursue the study of antiquities. The society was under the patronage of Archbishop Parker, and the meetings were held at the house of Sir Robert Cotton. Archbishop Whitgift became the president, and from 1572, to 1604, the society numbered forty members. After treating of this society at length, he said the meetings of this society fell into abeyance in the time of James I.; and the latest date of its meeting is 1604. James I. was petitioned to establish an academy royal, or college, to meet at Westminster or Windsor, to have a general chapter in a year, and four quarterly dinners. In Ashmole's Diary an entry occurs of the antiquaries' feast, held July 2, 1659. All subsequent antiquarian labours, up to the eighteenth century, seemed to have been confined to individual exertion and pursuit. Weekly meetings were held at the "Bear Tavern," in the Strand: there assembled Humphrey Wanley, Peter Le Neve, Mr. Maddox, Mr. Elstot, and other names well known to antiquaries; and after a time they removed to the "Young Devil" tavern, in Fleet-street, and afterwards to the "Fountain" tavern, in the same street. The association was continued to the latter part of the reign of George I., and in the commencement of that of George II., at apartments in Gray's-Inn, then at the "Mitre," in Fleet-street; and other meetings were held on the evenings after the Royal Society broke up. The admission fee was a guinea. In 1722, the number of members was limited to 100. In 1751, an Act of Incorporation was obtained, and the Society of Antiquaries was permanently established, the king naming himself founder and patron, and the admission fee raised to 5*l.* 5*s*.

Mr. Edward Cresy read a very interesting paper on

WINCHESTER CATHEDRAL.

The number of the cathedrals and churches built of stone throughout England, from the period of St. Augustine to the Norman Conquest, is so well attested, that it cannot be believed that the whole of them were swept away before the eleventh century, and that we have not a vestige remaining. That style which had for its peculiar character simplicity, and the Roman construction for its model, cannot wholly have disappeared while so many buildings which served the Saxons for imitation remain scattered over the greater part of Europe. The fantastic character found in the sculpture, and sparingly introduced in the capital, and over the entrances of their buildings, and which materially differs from the Norman, agrees precisely with the embellishments met with in the Saxon manuscripts which have come down to us. An eastern or Byzantine invention pervades the design, as well as the execution of the works of art at this period. There is not good ground for supposing they did not accompany St. Augustine. It has become a very general opinion that we can shew no remains of Saxon architecture, and that the sumptuous churches and cathedrals erected by the Saxons, in the most solid and perfect manner, only a century before the Conquest, were destroyed by the Normans, that others, on a grander scale, might be constructed on their sites by that enterprising people. The manner of building introduced by the Romans, the cutting and hatching of stone, the forming of mortar, and more particularly a concrete with or out of flint, gravel, and chalk, was not only adopted by the Saxons, but continued in use for many centuries after they were subdued by the Normans. Both churches and castles have been found with their walls formed of these materials. The cathedral of Winchester exhibits much of this construction, the oldest part of which may be attributed to the time of St. Ethelwold, who flourished about the year 980. The crypt, which has three separate divisions, is all east of the transept; the ground at present has accumulated nearly to a level with the capitals of the columns from which the vaults spring, but enough of them is to be seen to prove two of them, at least, to be the work of a time prior to the construction of the great central Norman tower. The first division is under the present choir, and has a row of five round columns up the centre, with four piers on each side, and four others which sweep round in a half circle, and form the aisle to the eastern termination of the first crypt. Masses of masonry have subsequently been introduced to accommodate the changes which have been made above, as well as to support some of the chapelries on either side of the choir. The masonry at the termination of the two aisles seems also to have undergone a change, and at the present day it is difficult to say whether the exterior followed the sweep of the interior; but in all probability it did. Where the great Norman central tower has its foundation, it is evident that the crypts have been cut away for its introduction, and afterwards made good, which is proof of their construction anterior to the tower. The crypt is lighted by rounded openigs, and vaulted in a simple manner but solidly. Beyond this, and under the nave of De Lucy's building, is a smaller crypt; its termination is also circular, and its vaulting resembling the great crypt. This was the termination of the Saxon church. The smaller crypt beyond is of much later date, and belongs to the time when the present Lady Chapel was erected. In the western aisle of the north transept the junction of the Norman and Saxon work is very evident, as is the difference in the character of the masonry of the two periods. The transepts, where attached to the tower, shew in part that they have been reconstructed, and that additional strength was given to the piers when that was done. Mr. Cresy alluded to the symmetry and order of setting out of these piers, and to the thorough knowledge of geometry shewn to have been possessed by Bishop Ethelwold, and that its application was of the most extraordinary kind for that period, when it is supposed that science was nearly forgotten. In that adopted by Bishop Ethelwold, we have the genius of those principles that succeeded, and which we admire in the styles of later date. Here is shewn all the skill in construction that can be demanded of an architect for any age, and more than is usually found; here is a perfect adaptation of every member of the pier to some useful purpose, and its very position. Mr. Cresy proceeded to state that the entire cathedral was entirely rebuilt by Bishop Elthelwold, in a substantial manner, towards the close of the tenth century, of which not only the crypt and the transepts exhibit the style in which it was erected, but that the nave and aisle are also his work, altered and encased by the celebrated William of Wykeham. The difference between the Saxon and Norman workmanship is clearly discernible, the latter being finished in a style far superior to the former. The tower is unquestionably the work of Walkelyn, the first Norman prelate that filled the see of Winchester; this abounds both exteriorly and interiorly with the zig-zag ornament so common in all Norman buildings, but no particle of which is to be seen in the original parts of the transepts and crypt. That the tower was erected to agree with the church as it then stood, and did not form part of an entirely new erected building, is shewn by its shape not being a perfect square, but being 50 feet by 48 feet, which perfectly agree with the respective breadth of the transepts and nave. It has been supposed by Dr. Milner, the late Mr. Carter, the great champion of Gothic architecture, and Mr. Britton—authorities to whose opinions he paid due deference—that the transepts were erected by Walkelyn; but after studying the subject for more than 30 years, and thoroughly investigating the point, he could entertain no doubt that the transepts were of Saxon erection, in which belief he was supported by Sir Christopher Wren, Dr. Nott, and Mr. Garbett.* The parts of the transepts immediately connected with the tower would shew, by the superior masonry, how far the Norman workmanship extended into them. Another specimen of Norman workmanship was the ancient font, which illustrated by its sculpture various legends of St. Nicholas, a saint in high repute with the Normans. The able author proceeded next to notice the portion of the cathedral erected by Bishop De Lucy at the close of the twelfth century, and which exhibited the first specimen to be found in any cathedral of the style known as the early English, and some of its purest and best workmanship. He then directed the attention of his auditors to the alterations effected in the nave and aisles by Bishops Edyngton and Wykeham, and pointed out how the latter effected the difference now visible between the aisles of the transepts and the nave, the upper windows of the latter filling the same situation occupied by those inserted in the original building by Ethelwold. Wykeham retained the original arch of these windows and inserted within them a pointed arch, hence their peculiar form, as may be distinguished by all careful observers. The magnificent altar screen, the peculiar glory of Winchester cathedral, was next touched upon by Mr. Cresy. It was commenced by Cardinal Beaufort and finished by Bishop Fox. During the episcopacy of the former the vaulting of the nave and its aisles was completed, as commenced by Wykeham. Bishop Waynfleet does not appear to have made any alterations in the building, several of which were effected by Bishop Langton near its eastern extremity To Bishop Fox the church is indebted for that portion which surrounds the altar; and to his friend Prior Silkestead for the chapel bearing his name, and for the extension of the Lady Chapel, the last work effected previous to the Reformation. Mr. Cresy illustrated his paper by numerous diagrams, plans, and drawings, shewing the principle upon which the whole church and all its parts and portions were set out; and after a very curious illustration on the subject of the rose windows (one of which it appears is to be seen in the northern transept of this cathedral), with all their curious yet scientific details, Mr. Cresy concluded amidst great applause.

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* On this disputed point we are disposed to agree with Mr. Cresy. In a paper on Winchester, by Mr. G. Godwin (*Civil Engineers' Journal*, vol. vi.), the question is thus argued:—"The great tower, Rudborne, the Winchester annalist states repeatedly is the work of Walkelyn. That part of the north transept which adjoins it is seen, from the execution of the masonry, to be of the same date; but the remainder of the transept more northward has a widely different appearance, and is unquestionably the work of a different period. The mortar joints are considerably larger, and the execution altogether ruder; nor is the design exactly the same, or the parts of the same height, so that management was required (and is evident) to bring the two portions satisfactorily together. My excellent friend Mr. Britton, in his history of Winchester Cathedral, considers 'this might have arisen from different workmen who were employed, even at the same time, and still more from those who were engaged on the church at different periods of its erection, for it cannot be doubted,' he continues, 'that an edifice of this size must have been some years in progress, and that many masons were unquestionably employed in its construction.' With the greatest respect for his opinion and every disposition to look with caution at any assumption of remote date, I am unable to think this argument conclusive in the present instance. If this difference in the workmanship had appeared *horizontally* throughout the building—if the lower story presented one appearance, the upper part another—this opinion might be tenable; but in the case before us, the difference is perpendicular, it is throughout the height of a particular portion, not the length of the whole; and before we can admit that the diversity of construction which is apparent, results from the different workmen who were engaged on the church at different periods, we must believe that one-half of the north transept was completed before the remainder and the tower were begun.

The statement of Rudborne, too, which is urged as proving the entire rebuilding of the church by Walkelyn, is not sufficiently conclusive to destroy an opinion founded on what we see before us. He says that Walkelyn, *a fundamentis capit reædificare*; words which, if I mistake not, have been used by chroniclers in some cases where it was known that much of the previous building had been allowed to remain, although the whole had been reconstructed even from the ground. In fact, that some part of the old cathedral at Winchester was allowed to stand, seems clear, from the continuation of Rudborne's own narrative; for he goes on to say that within a year after the completion of the new building, the bishop's men destroyed the old monastery, *excepto portico uno, et magno altari*, or, as Milner words it, 'leaving nothing standing at the end of the year except the high altar and *one porch*, which seems to have been the corresponding part, or eastern end of the cathedral church.' The word *porticus* has a doubtful signification, but unquestionably means more than what we should now call a porch."

The Rev. S. Isaacson read a paper on

THE ANCIENT TEMPLE AT ARBORLOWE, DERBY.

The paper commenced by stating that the circular temples of the ancient Druids are universally allowed to be the most important of all the monuments having reference to the early history of our country; and, consequently, any researches calculated to throw light upon their origin or character, or which may bring them more prominently before the public, and thus lead the inquiring mind to a minuter investigation, cannot fail to be interesting to the Archæological world. Though Arborlowe does not pretend to the magnificence of Abury or Stonehenge, it is still far too important to be allowed to repose under the incidental and scanty notices which it has hitherto received. With the assistance of a friend, Mr. Bateman, the author had succeeded in discovering the original deposit in the great barrow immediately adjoining the circle, which had hitherto defied the scrutiny of all previous excavators. The reverend author proceeded to give a history of circular temples, considered without reference to the British Isles, deducing their origin from the very earliest ages, and throughout all parts of the world. The altar under the hill, with the twelve pillars under the hill, erected by Moses, the twelve stones set up in the midst of Jordan by Joshua, and the twelve stones taken out of the Jordan and pitched in Gilgal, are striking illustrations of these temples of unhewn stone among the Israelites. The great stones or temples of the Druids in Britain, were as little worked as possible, and it is at least possible that the form was borrowed from the Phœnicians or Tyrians, who preserved it in their religious structures wherever they went. In Greece and Rome circular temples were erected, and open at the top. Homer describes them; in Baruch we read of their construction in Assyria. It was not, therefore, for ignorance of the fine arts that Druidical temples were erected without pillars; regular architecture and sculpture were sedulously avoided in these erections. Magnificence was sought for in vastness and large masses of stone: in Abury and Stonehenge specimens of this Cyclopæn architecture appear in all their colossal grandeur. Nor will the smaller temple of Arborlowe be found unworthy of attention, placed as it is at a remote distance from the eye of the ordinary traveller; and seldom witnessed except by those whose researches more immediately embrace such objects. The temple is surrounded by a large rampart, measuring 7 yards in height internally, and 6 externally; the fosse, which is on the inside, being 5 yards over at the bottom. The form is not strictly circular, but rather elliptical, or similar to a flattened sphere, the extreme diameter being 100 yards. The enclosed area is 60 yards in diameter, and the author had no doubt the number of stones originally amounted to thirty, which would harmonise with the ancient cycles. It is quite clear that these stones were never placed in an erect position, but laid on the bare surface of the rock at regular intervals. Probably the area was divided into twelve equal parts representing the months, so that the whole structure would constitute a calendar, consisting of 360 days, into which the year was originally divided. The two entrances to the temple were north and south, consisting of benches of earth across the fosse, on each side of which orginally stood a large stone. In the centre is one very large mass of rock, 15 feet by 8, and nearly 3 feet thick, weighing probably 5 tons, and called the sacrificial stone, from a large basin, caused perhaps by exposure to the weather, in which the blood of the victim was poured. Near this are two other stones much broken; and probably a fourth existed. The idea of this being a Roman work is described by the reverend author as altogether preposterous, as it agrees with no known specimen of their erections; and the Danes and Saxons have still less claims to its paternity. In fact, the contents of the cist lately found will place its construction at least 500 years before the invasion of Cæsar. We must conclude our notice with the following remark:—"The position of the largest stone, immediately facing the east, renders it highly probable that the founders were sun worshipers; and the two other stones exhibiting indisputable marks of having undergone the action of intense heat, it is not at all unlikely that on these were kindled the great fires with which the earliest inhabitants of the British Islands were accustomed, at the return of the equinoxes and solstices, to worship their god Belus or Baal, the Grecian Apollo."

Mr. Planché read a valuable paper "On the arms of Saer de Quincy, first Earl of Winchester, and on early armorial bearings, especially those termed 'honourable ordinaries.'" The excellent author considered the heraldic figures, entitled the ordinaries, had their origin in the necessity for strengthening the long kite-shaped shield, in use during the 11th century, and exhibited drawings of a variety of shields of that period, in which the forms of all but "the pile" were to be traced in the metal or wooden clamps or fastenings and defences of the shield. To the same origin he traced several other charges. Mr. Planché argued, that the symbolical characters attached to them were the inventions of later hands, and could not be traced higher than the 15th century.

INFLUENCE OF NEWLY-BUILT HOUSES ON THE HEALTH OF THEIR OCCUPIERS.

DR. SUTRO'S REPLY.

Sir,—Having seen the two last numbers of your valuable journal, I feel called upon to consider, dispassionately, the objections raised by Mr. G. Robins against the article extracted from a medical journal under the above title. Of course the article was only intended for the medical public, but since you chose to insert it in your journal, and thus occasioned the reply (if I may so call it), I think it my duty to enter fully into the writer's arguments, urged, I must say, in a most professional and gentlemanly manner, in which I should rejoice to see all scientific discussions carried on, though interest or fame may be affected.

I perfectly concur with the writer, that experience deserves greater appreciation in such cases than theory, and that nothing would be more dangerous than to sacrifice facts to speculation. But the question is, how far do theory and practice agree with each other in this point? If your correspondent never met with the pale anœmic face, wasted muscles, decrease of strength, sluggishness of all the functions (not sluggishness of the pulse), all consequent upon inhabiting a newly-erected residence, this only proves that he never placed persons in the early occupation of such dwellings, as are described as peculiarly injurious in the above article. Mr. Robins asks, "whether he has the charge of homicide upon himself for having constantly placed parties in the occupation of their dwellings within six months from the commencement thereof?" I ask, whether any charge of that kind can be inferred from the quoted article? Its whole purpose consists in warning against the too early inhabiting newly-built houses *without properly testing* their fitness for occupation. As a proof of this I beg to refer to the following phrase, occurring before the proposal that a sanatory commission should be appointed to examine the houses before inhabitation:—"Should any house be dried before the time appointed, the proprietor might request the sanatory commissioners to examine it, when, *if sufficiently dry, it might be inhabited.*"

Your correspondent shews himself by the careful tests he employs, that *he* must be satisfied of the dryness of a house before he places the occupier into it; and it can but be beneficial to point out and explain the injuries arising either from bad material of the house, or from exposure to its dampness, and to recommend the proper remedies against such evils. I must certainly admit, that new houses may be earlier occupied in this country than on the continent, inasmuch as the houses are mostly built here of burnt bricks, which contain and attract the smallest proportion of humidity, and thus occasion the least dampness. This may account for the less frequent maladies caused in this country by the above influences. I need not enter into the practical points mentioned, and the theoretical points doubted (but not disproved). By-the-bye, I could not find the expression, "*floating* particles of lime." The phrase referred to, runs thus: the following foreign substances are mixed with the air (speaking of newly built and not yet dried houses, as *particles* of *lime* which have been proved beyond doubt to exist in the atmosphere of new habitations, *being suspended* by the evaporation of the moisture. As regards the injury of *fresh* paint (for the question only turns upon *undried* paint), I have unfortunately had myself an opportunity very lately of witnessing serious consequences. A talented young friend of mine, to please an acquaintance, took a newly-painted room in his house; when I saw him after three weeks, I found him suffering with a severe and most obstinate cough. His removal was ordered, but the cough having resisted the most energetic remedies, he was advised by his medical attendants to try the effects of the bath. Without much pain, and without great fever, his lungs are so intensely irritated, that it would be sanguine to expect his complete recovery. Apologizing for intruding these hasty lines on your valuable space, I am, Sir, &c.,

SIGISMUND SUTRO, M.D.

3, Great Marlborough-street,
Aug. 7th, 1845.

SUSPENSION BRIDGES.

Sir,—I am not disposed to enter into a controversy with Mr. Dredge upon the subject of suspension bridges, even if I had the leisure and ability so to do; but still I cannot refrain from offering a few more remarks on the subject. I feel particularly obliged (as I am sure the rest of your readers must do) for the diagrams and explanatory matter contained in your 128th number; the principles of which are so clearly set forth and exemplified in a supplement to "Hosking's Treatise on Bridge Building," that the matter is not altogether new to me.

Mr. Dredge, in reply to your remarks with reference to suspension and compression bridges, was peculiarly unfortunate in his choice of a subject for illustration, because the works that failed at Derby and Ashton were in course of construction, and incomplete, therefore it was unfair to take advantage of such a circumstance, and arrive at such conclusion; but Mr. Dredge having a principle and theory of his own, does not rest his argument on such futile ground, but rather, as I before understood, against the principle of compression bridges generally. Suspension and compression bridges are totally different in principles, in their mode of construction and composition; and I should be sorry if an remark of mine should have a tendency ty injure an invention that may be said to be "in its infancy." But whatever opinion may be entertained of its usefulness and general applicability, I do not think sufficient evidence has been produced in its favour for us totally to abandon a principle which is generally acknowledged to be, and has proved itself efficient; and which has received the impress of time and experience, and been sanctioned and adopted by every professional man of eminence in this and other countries, both in the past and present age. As we very rarely hear of bridges of fixed principles falling after they have once been completed, the accidents above alluded to came very opportunely to fill up the vacuum there would otherwise have been in Mr. Dredge's argument. As so much has been said upon the subject, we may as well inquire if no failure has attended suspension bridges? I think I can enumerate many instances; one in India, the Broughton, the Montrose bridge, occasioned by the passage of troops; one at Morpeth, Northumberland, from a crowd of persons returning from a fair; the Yarmouth bridge, and others (which shew the effect produced by percussion, &c., on iron), and generally attended with a serious loss of life. The Menai and Montrose bridges, the Brighton chain pier, &c., have also been partially destroyed by the violent action of the elements or other causes.

A Madras paper, which seems to be well informed upon the subject, observed with reference to the fall of the bridge in India, "that the severe strain or vibration, occasioned by the measured tread of a body of military is indeed so trying to these structures, that it is considered by engineers that they will in this case bear but one-eighth part of the weight they might otherwise be safely loaded with. We have numerous examples of bridges of masonry, many of which have withstood the

test of centuries, and will no doubt continue to resist the injuries of time for centuries yet to come, affording striking proof of the durability of stone constructions; and as iron as a material for bridges (more particularly as applied in suspension bridges) is comparatively of modern introduction, and as its properties are but imperfectly developed and understood, I think it would be premature in us to pronounce an opinion upon its merits and fitness for such structures in the present state of the question, or until time and experience have more fully tested its qualities."

Professor Hosking says, "Stone is, however, pre-eminently the bridge builder's material. The carpenter can supply the want of a bridge in a comparatively short time, and in most cases at a small cost. The smith and founder will, with moderate assistance from the mason and bricklayer, effect what cannot be done with stone, and will in cases supply the place of stone with iron when stone might be used, *but grandeur of effect, power of resistance and eternity of endurance, are to be sought in masonry, the mason's art, and with the mason's material!!* We know of and possess nothing as a material for massive, permanent construction, and fitted for bridge building particularly, so free from liability to change in bulk from any natural influence as stone: and nothing, therefore, considering its other qualities as essential, so well adapted for the main constituent of a bridge."

It is well known that iron is injuriously affected by many causes that produce little or no impression on stone; viz., by atmospheric changes, electricity, continual percussion, vibration, galvanic action, &c.; it is liable to oxidation (a suspension bridge being composed of a series of small bars of iron presents a great surface to the corroding powers of the atmosphere), which in a series of years seriously impairs its strength, notwithstanding the precautions taken to preserve it; and percussion and vibration operate so injuriously upon it, as altogether to alter its internal structure and destroy its tenacity; in proof of which see the accounts of the numerous accidents that have occurred on the various lines of railway from the fracture of the axles of railway carriages, &c., and the discussions that have taken place on the subject at our scientific institutions.

I have observed in the fractures of iron axles that the internal character of the iron was completely changed, having formed into large crystals, while the external parts of the fracture presented a discoloured and smooth surface, as if it had commenced there, and gradually extended itself to the centre, until the axle was unable to bear the weight imposed upon it. Mr. Glynn, civil engineer, in shewing the effect of percussion upon iron, observes, "that the breaking action of railway axles commences with the first journey, and that they continually receive such injury as they would if they were laid over the edge of an anvil and received a constant succession of smart blows from a hammer.

"I consider the chains, or rather the bar, of a suspension bridge would be similarly operated on by the passing traffic, and this would readily account for the failure of the Yarmouth Bridge, as it was distinctly stated in evidence that more than double the number of persons had been upon the bridge at one time since it was widened than were upon it at the time of the accident; under these circumstances we should naturally have supposed that the failure would have taken place then when the greatest weight was upon it; and the inference I draw from this is, that some other cause than the one attributed occasioned that sad catastrophe. I am quite aware that smiths, in welding bars of iron, do not always bestow that attention to it they ought to do; and this shews the necessity of having iron properly tested; that is likely to be subject to much strain; and as it is the usual practice to prove it to a much greater weight than it is intended to support, the iron even in that operation may sustain an imperceptible injury, and fail under much less weight than it was calculated to bear when applied in its proper place."

To obviate the danger arising from the breaking of the axles of railway carriages, it has been recommended to change them frequently; but to change the bars, plates, bolts, &c. of a suspension bridge would be rather an inconvenient and expensive operation. There is another subject to which I wish to draw your attention, and that is, the undulating and oscillating motion of suspension bridges; it is this circumstance that precludes the possibility of railway companies adopting them, in consequence of the great danger attending the passage of a heavy weight, concentrated to one point, and the sudden percussive action of a railway train.

The tremulous motion upon the Hungerford and other foot bridges is unpleasant to foot passengers, and the passage of the ordinary traffic over the Menai and other bridges opened for general purposes is particularly disagreeable; and I am informed that, during a heavy gale of wind, it is almost impossible to pass over the Menai and other bridges similarly exposed. This is occasioned by the want of rigidity or stiffness, which has not yet been attained in suspension bridges, and which it seems almost impossible to attain, in consequence of the effect variations in temperature produce upon iron chains of great length. This to a bridge of large span exposed to gales of wind, operating both sideways and underneath the roadway, must be ruinous in the extreme; in confirmation of which I may instance the injuries sustained some time ago by the Menai, Montrose, and other bridges, the chain-pier, Brighton, &c. Mr. Dredge's bridges have hitherto been constructed on a small scale, and in favourable situations. I am apprehensive, if the principle was carried out on a large scale, and in similar trying situations to those alluded to, it would be attended with no better result. Mr. Dredge, I hope, will have the opportunity of trying his suspension bridge at Weston-super-Mare, where its advantages and powers may be fully proved; although I consider such a situation the least suitable for iron structures, from the injurious effects of salt water upon iron.

On the correctness of Mr. Dredge's system or theory, I shall not attempt to enter, my object being to shew the superiority of bridges of fixed, to those of iron on the suspension principle, wherever it is possible to introduce them, "for heavy general traffic, and where great strength and durablity are required."

Suspension bridges, as beautiful picturesque objects, are certainly great embellishments to a landscape, but I think in our public works in this country other points ought to be kept in view; namely, usefulness and durability, combined with economy.—I am, Sir, &c.,

Brecon, July 29, 1845. B. B.

NOTES IN THE PROVINCES.

Within the last few months some rather extensive alterations have been effected in the interior of Durham Cathedral, under the direction of the dean and chapter. The old pulpit has been removed, and one of stone erected in its stead; the pews appropriated to the ladies on the north side of the choir have made way for carved oak benches with backs and cushions. A new font, more in keeping with the general architecture of the church than the present one, will shortly be erected, and the screens which inclosed the side chapels on either side of the organ have been taken down, producing, it is said, a remarkably good and striking effect.——The Earl of Carlisle is making great improvements and additions to his ancient baronial castle, Naworth. Fifty workmen are employed at present, and the interior of the roof of the hall is just completed. It is formed of oak, richly panelled; the height is 30 feet. The dining-room which, before the fire, was separated by a wooden partition from the hall, is now added to it, which makes the entire length 96 feet. The noble proprietor has now decided upon building a new tower, and restoring the ancient entrance on the west side of the castle, which was discovered after the fire, and which is said to have been walled up by Lord William Howard, "Belted Bill," in the reign of James I.——A memorial, numerously signed by the residents of Broad-street, Bristol, was lately presented to the Governor and Directors of the Bank of England, in London, soliciting that the new building, intended as their branch might be forthwith commenced, so as to be finished at the same time as the new Guildhall. The directors, in compliance with the requisition, have commenced taking down the old buildings for that purpose.——The commissioners of the port and harbour of Whitby having adopted the plans of Mr. Pickernell, their engineer, for the improvement of the harbour, operations for extending the east pier into deep water were commenced on the 7th instant. Forty feet of foundations in ten stones, 6 feet wide by 3 feet thick, were laid; the bed in the rock so correctly levelled that no part of the superficies varied 1 inch; and the vertical notches filled with broken whinstone and cement in seventy-seven minutes. From the beginning to pump the water out of the dam, to the foundation-stones being covered by the flowing tide, two hours only intervened.——On the 17th ultimo, the ceremony of opening the chancel of Leamington church took place in the presence of fifty clergymen. The church is being reconstructed in a style of cathedral grandeur, the chancel end only being as yet completed. Its new nave is so lofty, that it covered in the tower of the old parish church, which was left to stand for some time within the building, as it afforded the workmen the means of elevating their scaffolding upon it, while they carried up the works to at least 25 feet above the altitude of the once much thought of tower! After this tower had been thus useful, as a mere scaffold pole to the inside of a new and spacious structure which was raised above it, the removal of it as an obstruction then commenced, and now there exists not a single vestige of the ancient village church of Leamington.——Lady Bassett, daughter of the Earl de Dunstanville, has subscribed 1,000*l.* towards the fund for the erection of a new church at Illogan.——Nearly four acres of the space heretofore known as the New Buildings, Portsea, have been purchased by Government, at a cost of little less than 60,000*l.*, for the formation of a basin for steam-vessels. One hundred and thirty persons have been ejected and the ground is already cleared.——A project is being entertained at Sunderland for the construction of docks on an extensive scale. During the last two or three weeks, persons have been employed in surveying, taking levels, and drawing out plans of the moor, as it is called, and the bed of the sea adjoining it, on the west of the town. The line selected is from near behind the present south pier to Hendon, the whole length of the moor, an extent of nearly 3,000 feet, and from the bank of the moor extending into the bed of the sea about 400 feet; the dock is proposed to be 2,500 feet in length and 350 or 360 in breadth, with entrance from both north and south.——Plans are being prepared in accordance with instructions given by the Duke of Sutherland for a new church, which his grace purposes erecting near Longdon. The church is to hold 460 persons, and will be commenced forthwith.——The Town Council of the borough of Doncaster have announced their intention of applying to the Lords Commissioners of her Majesty's Treasury for their approval and permission to erect and build markets for the sale of meat, fish, poultry, &c., and for that purpose to raise a sum of money not exceeding 16,000*l.*——Very extensive improvements have been made during the last two or three years in St. Mary's Church, Truro. Recently two stained-glass windows have been erected at the entrance end. The altar window consists of five compartments; each of which comprises a niche and lofty canopy, in the perpendicular style. In these five principal niches, on rich damascene grounds, are represented full size figures of the Saviour, St. John the Evangelist, St. James the Less, St. Philip and St. Simon. The Saviour holds in his right hand a globe, on which are depicted emblematical representations of the three great eras of the Church; while depending from his arm is a scroll, bearing the inscription, "Surgite, eamus." The four Apostles named bear emblems significant of the mode in which they severally suffered martrydom; they also bear scrolls with their names inscribed thereon. Above these five principal figures are smaller representations of St. John the Baptist, St. Peter, and St. Paul, with Angels, in attitudes of prayer and praise, and various other appropriate figures and emblems. The south window is mostly emblematical. The body of the window is composed of *quarrels*, interspersed with labels and texts, presenting a quaintly antique appearance, and inclosed by a rich bordering which re-

solves itself into luxuriant headings of foliage. Inwrought with these are medallions, containing the Christian monogram, and the evangelical emblems, and pendant from the foliated arches are escutcheons, on which are depicted symbols of our Lord's passion. The tracery of the window is chiefly occupied by angels bearing scrolls inscribed with Scriptural texts. The artist who designed and executed these windows, and who superintended the other improvemnts is Mr. Warrington, of London. —— The extensive river-side property of Messrs. Cookson, situate at South Shields, having recently passed into the hands of the wealthy and influential firm of Messrs. Swinburne and Co., in which Mr. George Hudson, the eminent railway director, is the principal partner, the scheme for constructing deep and capacious docks within Jarrow slake, and adjoining Mr. Hudson's purchase, is about to be revived under auspices that ensures its complete and rapid success.——The Round Church at Cambridge was re-opened on the 10th inst. It appears that the incumbent is responsible for nearly 300*l.* for alterations and improvements made since the stone altar case was decided, and for the liquidation of which he solicits assistance. —— The marble statue of Dr. Goodall, the late provost of Eton, by Mr. Henry Weeks of Pimlico, was placed last week upon a marble pedestal on the south side of the ante-chapel of Eton College. The late provost is represented in a sitting posture, with an open book in his left hand, resting on his knee, the right hand being slightly raised as in the attitude of reading aloud, and his left foot resting on a raised cushion. The work is what may be termed a "seven-feet-six-inch figure," but the venerable deceased being in a sitting posture, the height of the statue is not more than above five feet. The pedestal bears a Latin inscription, said to be from the pen of the Rev. Dr. Hawtrey, the head master of Eton school.——The old market house at Epping, which was erected about the time Queen Elizabeth renewed the charter for the market, was entirely removed last week, in accordance with the expressed wish of the inhabitants. It had been for a long time in a decayed and even dangerous state.——A lunatic asylum is about to be erected for the county of Wilts, the cost of which will be 31,750*l.* —— The Manchester Parks' Committee have made a fourth purchase of the Walness estate, which immediately adjoins the Lark-hill property. The four purchases stand thus;—1. Lark-hill, 7 acres, 4,500*l.*; 2. Endhamham, 30 acres, 7,250*l.*; 3. Bradford-park, 31 acres, 6,200*l.*; 4. Walness-meadows, 25 acres, 5,875*l.* Total 23,825*l.* —— The committee of the privy council for education have made a grant of 1,000*l.* towards the building of the training school at Durham, and the national society for the education of the poor have granted 300*l.* for the same purpose.—— It is in contemplation at Manchester to erect a new exchange by means of a company, and to raise 200,000*l.* for the purpose in 25*l.* shares. The *Manchester Courier* states, "We have had an opportunity of inspecting a drawing of the intended elevation, which, if carried out, will be a very great ornament to the town,—indeed, we have no building in Manchester that can at all be compared with it; it bears some resemblance in form to the Liverpool Custom House, but is altogether a very superior and handsome structure, of two stories. The site is at the upper end of Market-street, High-street, Canon-street, and Palace-street, covering Marsden-square, the whole of the shops, warehouses, and other property within those limits having to come down. The building is to form three sides of a square, having the open or principal front to face High-street; the open space in front of the centre and between the two wings will be a raised stone platform, to be approached by a handsome flight of steps from High-street, for the convenience of the congregated merchants and manufacturers during 'change hours. The news-room is to occupy the Market-street side of the square or wing, occupying two stories, thus forming a spacious and lofty room, lighted by three domes and the side-lights; the size of this room will be nearly the same as the large room at Exeter Hall, London, about 12,000 square feet; the approach to it is made by three entrances from Market-street. The centre of the building in both stories will be converted into offices, which will be let off for mercantile purposes. The northern, or Canon-street wing, will form a Stock Exchange, and a public mercantile sales room; above these rooms, on the second story, will be a large room of corresponding dimensions with the news-room in the other wing, which will be a public room applicable to the purposes of a large music-room, or public meetings, or it will be divisible into three rooms, as occasion may require.—— At Taunton, a committee has been formed for the purpose of improving the town. Suggestions are courted and may be addressed to the Editor of the *Taunton Gazette*.——The erection of a New Market is at the present time occupying the attention of the inhabitants of Coventry. There is scarcely another town in England possessing a similar population, viz., 31,000, that is so wretchedly off for market accommodation.——The subscriptions for erecting the proposed New Church in the district of St. Simon, in the out-parish of St. Philip and Jacob, Bristol, amounts already to nearly 500*l.* —— The owners of the late Suspension Bridge at Yarmouth have subscribed 50*l.* towards the fund now raising for the restoration of the venerable church of St. Nicholas, and the establishment of a National School in that town. Lord Woodhouse has sent 20*l.*, and a lady 100*l.* towards the same purposes. ——The foundation-stone of the new National School Rooms in St. Saviour's parish, Bath, was laid last week by the Rev. Dr. Stamer, rector of the parish, in the presence of a great concourse of persons, among whom were the architect, Mr. Wilson, and the builder, Mr. Freeman.——The railway tunnel at Bangor, through hard rock, has been commenced, and the superintending engineer has taken up his residence at Bangor Ferry. The site for the new bridge has been determined upon, but no decision has yet been come to respecting the kind of bridge to be thrown over the Menai Straits.

SETTING OUT RAILWAY CURVES.

Sir,—I for one am obliged by Mr. G. Hawkins' reply to "Amateur" upon the subject of railway curves, and hope he will not complain of my obtuseness in requiring a little more information; after stating the formula for the value of B D as being always equal to rad. $-\sqrt{\text{rad.}^2 - \text{sin.}^2}$, he says "and the same process will apply to any other required point in the curve, merely substituting the value of sin.^{2} in the expression, as the distances in the tangent A T, increase from the point A. Perhaps he will be good enough to explain this, and how it is applicable (supposing B D to be laid off at the 1st chain) to the several distances squared off from the tangent at the 2nd, 3rd, 4th &c. chain to the 10th.

Again he says, further on, "the above method will be convenient, as it affords a facility for calculating tables for the versed sine of an arc of any radius from the one already obtained; for since the curvatures of circles vary inversely as their radii, a simple proportion will give the value of the versed sine of any other required."

I dare say he will think the proportion of my attainments simple enough—but I should feel more obliged by any explanation he may please to give, illustrating the same by an example in both cases, which perhaps might enable me to reduce the theory more readily to practice. I am Sir, &c.

Liverpool. N.

Referring to the diagram (Builder, July 26th), it is scarcely necessary to observe that in the expression radius $-\sqrt{\text{rad.}^2 - \text{sin.}^2}$, which is the trigonometrical value of the versed sine of an arc, sin.^{2} represents the square of the distances measured on the tangent, A T, thus supposing A D to be equal to two chains, and the corresponding ordinate B D be required, it is merely necessary to substitute in the formula the value of A B or two chains for sine.^{2} For instance in a curve of 80 chains radius B D = radius $-\sqrt{\text{rad.}^2 - \text{sin.}^2} = 80 - \sqrt{6400 - 4} = 80 - 79{\cdot}975 = {\cdot}025$ chains or 2·5 links.

The same process will give the ordinate for any other point, substituting in each case for sin.^{2} the squares of whatever number of chains that point may be from the commencement A. Generally, the formula may be thus stated:—The ordinate is always equal to the radius of the curve, less the square root of the difference of the squares of the radius, and the distance measured on the tangent to the point where the ordinate is to be laid off.

With reference to the curvatures of circles varying inversely as their radii, it ought to have been stated, that although as an abstract proposition it is strictly correct, yet its use in the manner proposed is only to be recommended within certain limits, since the actual relation between the curvatures of two arcs, measured by their versed sines, is only mathematically true at the point of contact. The practical application of the principle, if not rigidly warranted, may however be adopted in arcs whose radii do not greatly differ, and where the sines are small compared with the radii—the error in such case not being appreciable, thus supposing it were required from the one above obtained at two chains, to find the ordinate corresponding to it for an arc of 78 chains radius—we have by the proposition before-stated the following proportion:—As 78 chains : 2·5 links :: 80 chains : 2·56 links—which only differs from the correct value by less than the one-hundredth part of a link.

Although implying additional time, it would, as the safer course, be better perhaps to calculate every separate ordinate according to the formula, and the labour may be much abridged by using an ordinary table of powers and roots.

The radii of railway curves being usually confined within certain limits, a table calculated by the above method for ordinates up to eight or ten chains might be prepared beforehand, and would save time and materially facilitate the subsequent work in the field.

It was before observed that usually it would be found convenient to recommence the operation at every 8 or 10 chains, and a method accordingly was suggested for setting out a new tangent to the curve. The following will perhaps be found in many respects superior to the one already given, as no ground is lost, and affords a better position for ranging the new line. Let D be the point from whence it is required to start with the new tangent, from A set off on A B a portion equal to $\frac{\text{A B}^2 \times \text{B D}^2}{2\,\text{A B}}$: that is to say the sum of the squares of the last ordinate and the whole distance measured on the tangent, divided by twice the same distance. A line from the point so obtained ranged forward through D—the last point in the curve will be the new tangent required. G. Hawkins.

NEW WINDOW IN ST. JAMES'S CHURCH.

We are told that it is proposed to put up a *Gothic* stained-glass window in St. James's Church, Piccadilly, but hope our informant is in error. We abuse and scoff at those architects who, after the introduction of Italian architecture in England, disfigured our noble cathedrals and churches with Corinthian altar-pieces and Wyatt-knows-what organ screens, and yet would commit similar absurdities ourselves. Consistency is surely as necessary in an Italian building as in one of the pointed style, and we conjure the vestry or committee, who are said to be about to perpetrate this enormity, to pause before they write themselves down, "foolish." The neighbouring church of St. George, Hanover-square, should be a beacon to warn them: one such mistake in London at this date is surely enough.

Freemasons of the Church.—Aug. 12. The Rev. G. Pocock in the chair. The minutes of the last meeting were read and confirmed. The Rev. F. P. Pocock, Rev. John Pampillon, M.A., F.S.A., Messrs. Edward Baldock, G. R. Lewis, and John Britton, F.S.A., were elected members. Mr. William Curling exhibited some specimens of very early locks, manufactured during the middle ages. Mr. E. D. Price exhibited a rubbing of a beautiful brass, from Upper Hardres, Kent. A paper was read on the ancient baptismal fonts in England, comprising the origin and history of baptism, baptistries, chapter-houses, &c., copiously illustrated by numerous specimens from the several counties from actual admeasurement.

EXAMPLES OF NORMAN FONTS.

AT DODFORD CHURCH, NORTHAMPTONSHIRE.

AT EYDON CHURCH, NORTHAMPTONSHIRE.

NEWSPAPER ONE PENNY BUILDER

ILLUSTRATIONS OF KITE'S SYSTEM OF VENTILATION.

Fig. 1.

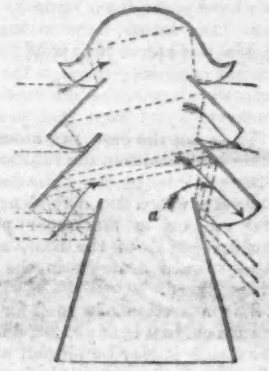


Fig. 2.

Fig. 3.

Fig. 4.

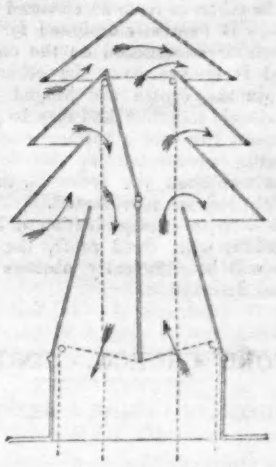


Fig. 5.

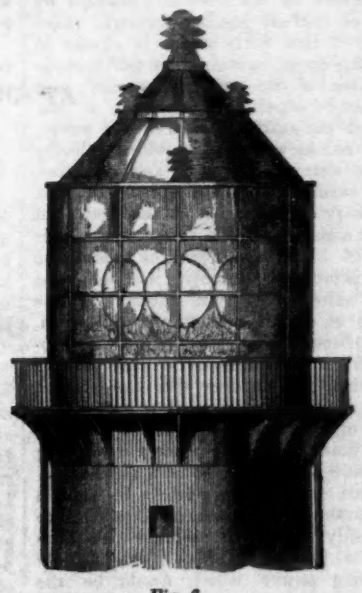


Fig. 6.

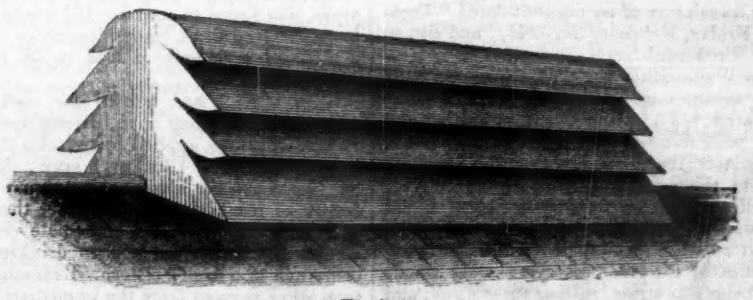


Fig. 7.

EXAMPLES OF NORMAN FONTS.

FONT AT DODFORD CHURCH, NORTHAMPTONSHIRE.

This beautiful Norman font adjoins the north side of the western pillar of the nave of Dodford church; the stone of which it is formed is the Northamptonshire oolite. The sculpture of the font is in good preservation, but it is unfortunately cracked across. A print of it is given in Van Voorst's "Baptismal Fonts," who states in the description, that it has lately been cleaned, as well as the material would permit, by the direction of the vicar, the Rev. W. Thornton.

FONT AT EYDON CHURCH, NORTHAMPTONSHIRE.

A representation of this curious font is given in the 3rd vol. of Baker's "History of Northamptonshire," from which it has been copied (without acknowledgment), on a little less scale, for Van Voorst's work, where it forms the sixteenth example. The style of the font is late Norman; both Mr. Baker and, after him, Van Voorst's editor suppose the octangular base to be of a different date to the bowl or upper part. It certainly appeared to me to be earlier. A font very similar to this, with a square instead of an octangular base, is in Houghton-Regis church, in Bedfordshire, and is given by Fisher in his Typographical collections for that county, published in 1812. C. J. Richardson.

REMARKS ON A NEW SYSTEM OF VENTILATION.

BY JAMES KITE.

Ventilation has been of late so much the topic of consideration and discussion, as well as the subject of treatise, by eminent and scientific men, that it is with great diffidence the author of the present paper attempts to bring forward what he has to contribute on the subject. An inducement to do so is held out by the agitation on that point, and the conviction that may be said to rest on the mind of the public generally of the great importance of proper ventilation, as contributing to the comfort, happiness, and duration of human life.

Ventilation appears naturally to consist of two distinct divisions. The first and greater is in the manner of arranging and distributing the various streets, alleys, &c., forming a town; the second or lesser, in the construction of each separate house or building where human beings are either domiciled or congregated together.

The present paper has more especial reference to this latter part of the subject, and therefore has for its object the application of proper arrangements for the ventilating of churches, hospitals, manufactories, dwelling-houses, ships, carriages, &c.

It is not necessary to occupy time in attempting to describe the deleterious effects of the products of combustion or respiration, and the evil consequences which they produce upon the constitution when inhaled by reason of

badly ventilated apartments; these predominant evils occupy a considerable share of the attention of the scientific and legislating classes of society. We shall therefore proceed to describe the nature of our improvements, and begin by remarking that there are few who dispute the propriety and advantage of imitating nature as far as possible in works of art, and especially in such operations as ventilation: where we can render any particular natural law available to our service, to take advantage of it both for the sake of economy and effect. How far this has been accomplished in the present instance remains to be seen.

It is a well-known law, that when an elastic body impinges upon a firm plain surface, the angle of reflection is equal to the angle of incidence. Referring to fig. 1, which is a section of a roof suitable for being fixed on the top of a chimney or flue, or by being prolonged, to form a ventilating ridge for a church or other public building, it will be observed that this roof is formed of a series of surfaces inclined more or less from the perpendicular, of which those below form a less angle than those at the top, being in regular gradation in this respect from bottom to top.

When the wind blows against the roof, as it impinges upon the lower plain, it would be reflected upwards upon the under surface of the second reflector or plain surface, from thence on to that on the opposite side, where it is deflected downwards outside. When the wind blows against the roof, or cover, an upward current is produced, and even a wind falling perpendicularly will actually facilitate the upward draught.

It is a known fact, and one which admits of being easily illustrated, that when a very small stream of air or other fluid is propelled amongst a body of the same, it carries a very extended current along with it, which arises from the friction of the particles or atoms of the air in motion against that at rest. In the case now before us the friction produced by the wind, or current passing through, takes along with it that with which it comes in contact in the cover, causing a partial vacuum or rarefaction of the air in that part; and which cannot be supplied by a portion of that passing in at the entrance side of the cover, because it comes with an acquired velocity sufficient to carry it through, and therefore the partial vacuum must be supplied from that in the chimney or shaft, but as the action of the wind is constant, so the upward current is also constant. It is then upon the application of these principles, namely, the reflection of elastic bodies from plain surfaces at the same angle at which they impinge thereon, and the effects of friction, which is produced between one current of atmospheric air in passing over another, that the present improvements are carried out; it is upon the proper arrangement of the reflecting surfaces that the whole success depends; this being attained, there is no need for any mechanical arrangements such as require to be kept in constant motion, and are therefore subject to being speedily worn out, neither is there necessity for the application of any costly prime moving power which would be the source of increased expenditure. These covers, or roofs, are quite sufficient to create an upward current where they are exposed to the wind, and have been already found fully equal to any thing here reported of them; they are susceptible of great variety of form either as roofs or cowls, and may be combined with almost any of the present known forms, such as the lobster back, the malt-house cowls, &c., and it may be here remarked that one great peculiarity of this ventilating covering is, that however light the wind may be, still its action must be favourable, whereas, in almost all if not in every one of its forms heretofore in use, when the wind is light they are found in their most unfavourable position, or their action ceases to be effectual. For the ventilation of ships and carriages this top is peculiarly applicable, and when provided with a valve, a *downward* current can be produced with equal facility. By using two of these tops, one for producing a downward current, and another for the upward current, a ship may be most effectually aired and ventilated in either hold or cabin.

To prove the efficacy of these coverings, if a piece of flammable substance in a smouldering state be put in the bottom part of the ship, allowing room for the admission of air, the moment that a current of air is projected against the reflectors, the smouldering substance is brought into a flame from the upward current produced; the same will be the case when we blow right down upon it.

Fig. 2. The dotted lines in this sectional figure shew the course that would be followed by the wind in passing through the roof were each separate atom of the atmosphere coming at an interval apart from that preceding it; but as this is not the case, the atoms being in immediate juxtaposition, the resultant of these dotted lines will be in the direction indicated by the arrows, which has a tendency to create a partial vacuum in the upper part of the lowest chamber (*a*) of the roof, and thereby causes an upward draught in the shaft over which it is placed.

Fig. 3 is a section of a roof for producing a downward current in any shaft, flue, or opening over which it may be placed, when that is desired. For this purpose it is furnished with a valve (*b*) attached by a screw to the lower deflector on one side. When this valve is put up in the position represented, the current of atmosphere is thereby made to follow the course marked out by the arrows.

Fig. 4 has this valve put on in a permanent manner. Both these are peculiarly applicable to the ventilation of ships, and such places as are so circumstanced as to require the purer air to be taken in from an elevated situation.

Fig. 5 is expressly designed for shipping; the fresh air is admitted on the one side, the vitiated is ejected from the other; the two valves in the centre are hinged with their edges closely together, and may be put over to any side of the roof at pleasure by means of the cords represented by the dotted lines. The arrows shew the action in the position in which they are represented.

Fig. 6 is an exemplification of light-house ventilation, with fixed roofs, the action of which will be sufficiently obvious from the previous description.

Fig. 7 illustrates the application of the ventilating roof or ridge to a church or other public building.

HOUSES AND PEOPLE DESTROYED BY MUD.

The *Quarterly Geological Journal* gives the following account of a remarkable torrent of mud, translated from a newspaper lately received from Colombia. The facts are attested officially by the local authorities. The first extract is a simple translation of an account dated "Tasajeras, Friday, February 21, 1845," and signed "R. J. Treffery."

"On Wednesday, the 19th instant, a little before seven, A.M., there was heard a great noise in the plain of the river Lagunilla,* and at the same time an earthquake took place. Immediately there appeared in the strait or ravine in the mountains from which the river Lagunilla arises, an immense flood of liquid clay, which pursued its course with the greatest rapidity through the whole plain on both sides of the river, carrying away woods of tall trees like straw, rolling them away, and covering them in such a manner as to leave no sign of there having been a wood at all. The same happened with regard to the houses and cottages which it met with in its course, overwhelming them with their inhabitants, and carrying away and burying those unhappy persons who were fleeing from death, so that nearly all the population of the higher part of the valley has been destroyed, and many who had escaped from the torrent and gained some high or enclosed place have found themselves insulated, and have perished by famine. It was quite impossible to succour them, for the whole plain was covered with a layer of mud and sand, so deep that no one could pass without being swallowed up. Some few persons, however, found an asylum by being near the edge of the torrent, and saved themselves by roads formed of the branches of trees."

The space of land covered may be estimated at from four to six leagues; and the quantity of matter poured down at 250 millions of tons.

* The Lagunilla is a small stream emptying itself into the river Magdalena, and situated in the north-western extremity of South America, in New Granada. Ibague, the town alluded to in the subsequent document, is some distance to the west of Santa Fé de Bogotá.

LEAD PIPES.

We copy from *The Medical Gazette* the following statement relative to the deleterious effects of water impregnated with carbonic acid passing through lead pipes. It is written by Mr. Rust, of Windsor, who was consulted on the respective cases:—

"On the 23rd of last April a labourer, residing at Ascot, and employed by Mr. Hibburd, clerk of the race-course there, applied to me at the dispensary at Windsor, evidently suffering from the poisonous effects of lead; his complexion was sallow, and he was constantly suffering from severe pain in his bowels, attended with flatulence. He had the dark blue mark round the gums, so peculiar to those who are suffering from the deleterious effects of that metal. On inquiry I found that his children had been in bad health since they had lived at Ascot, and that they had become weak and sallow, and had suffered from pains in their bowels, and indigestion, and that he had sent one of the most affected away, believing that the air of the heath was prejudicial to their health. I immediately asked him if the water he drank, and used for cooking, passed through lead, and was answered in the affirmative. I procured a quantity of it, and, on the addition of water impregnated with sulphuretted hydrogen, a large precipitate of sulphuret of lead was thrown down. By the use of other water, and of appropriate remedies, the principal of which was alum, he is slowly recovering.

In November, 1842, one of the whippers-in at the royal kennel at Ascot, applied to me, suffering from lead palsy, after a severe attack of colic during the previous summer, which was believed to have been inflammation of the bowels. Having previously met with similar cases, I felt convinced that lead was dissolved in the water which he had used for cooking and drinking; and, on inquiry, I found that disorders which could be attributed to the effects of lead had for a long time been prevalent in the establishment at the royal kennel, and that the dogs had for a long period suffered from a species of paralysis denominated kennel lameness. The water was in consequence analysed by Dr. Ryan, at the Polytechnic Institution, the results of which were as follows: Water at the spring head, specific gravity at 60 degrees, 1·018. The contents of an imperial pint, on evaporation to dryness, yielded 2·37 grains of solid matter. The solid contents of an imperial pint being—Chloride of sodium, 1·54 grains; chloride of magnesium, 0·71 grains; sulphate of lime, 0·128 grains; a trace of carbonic acid: total, 2·378 grains. The water, after it had passed through the leaden pipes, was found to contain ·164 grains of carbonate of lead in an imperial pint, or one and a third of carbonate of lead in an imperial gallon.

Soon after I had treated the case of the whipper-in, a young man, Richardson, from East Hampstead, applied to me, with the worst form of lead palsy I had ever seen; this came on him when in service as footman in the family of Sir Willoughby Rooke, then inhabiting a mansion in the immediate vicinity of Ascot, and was attributed to drinking water contained in a leaden cistern. Recently I have seen other persons from the immediate vicinity of Ascot, suffering from various symptoms, which might be caused by lead, and, on inquiry, found that they were supplied by water which passed through the leaden pipes of pumps. I think it may be fairly deduced from the above facts, that the spring-water at Ascot contains a small portion of free carbonic acid, which dissolves portions of lead in passing over its surface, and it will readily account for the fact, that the leaden cisterns and pipes usually so innocuous, should occasionally produce such deleterious effects. The paralysis of the whipper-in was entirely removed by alum, combined with guaiscum, and Richardson was very much relieved by the same remedy. From the almost specific effects of alum in painters' colic (a disease I have been frequently called on to treat), I was induced to try whether it would be found serviceable in the paralysis produced by lead, and have on many instances found it of the greatest service, although in many more it has been useless."

Britton Testimonial.—The subscription lists are still open, nor have the committee yet determined on the nature of the testimonial.

THE QUESTION OF SEWAGE IN METROPOLITAN SUBURBAN DISTRICTS.

Sir,—I hail with much gratification the extracts from the pamphlet by Mr. John Leslie in your number of this day, not as proposing either to vindicate the charges or defend the conduct of those so charged, but simply on account of the attention of practical men being thus drawn through your columns to a subject, that however deeply it has apparently arrested public attention, has hitherto been only theorized upon. According full credit to my Lord Lincoln for his untiring zeal in the matter, any broad legislation cannot meet the particular difficulties of individual localities; instead, therefore, of attempting to enter upon any discussion of this pamphlet, I will state the course I have taken in a suburban district, upon the wants of which, in regard to sewage, I have bestowed cheerfully much labour; and I would entreat our professional brethren, each in their own district, to address their attention to the subject; such a mass of useful evidence would thus be obtained, that subsequent legislation thereon would, by a variety of provisions, become applicable to each individual case; the parties interested (making such reports) knowing best their own grounds of complaint, which broad legislation may avoid giving relief to.

The power of appeal from a parish or an individual (described as existing in the Finsbury distict) would appear as of much advantage over the present irresponsible authority of most commissions.

I am not prepared with Mr. Leslie to charge any commission with malversation in the execution of their duties: I sincerely believe their powers are too prescribed to afford the relief they would desire to give; and it would be absurd to imagine they individually were all Solons, and at their appointed conclaves could divine the wants of large districts. If in a public question, then, parties are too indolent to raise their voice as to their particular grievances, it cannot be wondered at that, as of necessity, broad legislation takes the place of detailed enactments upon fair ground of complaint, which would, so to speak, bring relief to each man's door.

I will set the example (instead of discussing the question at large) of confining myself to what has recently fallen within my own observation; if such a course is approved and followed, then by a similar discussion, comes the suggestions for remedy, and, I again repeat, a mass of evidence would thus be obtained that must be irresistible, and cannot be expected to be within the knowledge of those to whom we look for relief through legislation. All commissions of inquiry can only grapple with broad facts, sometimes perverted for particular interests, and at no time developing the whole truth. Blue book upon blue book may be heaped, like Pelion upon Ossa and Ossa upon Pelion, and still the case of individuals, nay, of whole localities, may have been uncared of; if we are therefore longer silent, the blame is to a great extent with us.

I would state, as introductory to the remarks I intend making, that it must not be assumed that I condemn the deep sewage described in Mr. Leslie's pamphlet as constructed in metropolitan districts: confining myself to endeavour to shew my objections to such sewage in a suburban district.

No parish round London (that I am aware of) having the power of making a rate for internal operations of drainage, the application for relief must necessarily be made to the commission within whose authority the district chances to be situated; such, then, was the case which drew my attention to the subject: a large and respectably inhabited locality feeling they had no power internally, applied to a court of commissioners to form a new district, and by the authority they possessed to raise the necessary funds by loan, to be repaid through the medium of a rate within a prescribed period. It may be well to pause, and state the condition of this district with respect to drainage, as defining the position of most suburban districts; the ground, naturally rising, partakes of the acclivity of the hills—at the extremities of the boundaries to some considerable extent. The land when used for agricultural purposes was drained by boundary ditches, and the course of the hill water took that pointed out by nature, the whole of course flowing to the low lands. As the land became occupied by buildings, the front boundary ditches were arched over, but at no greater depth than they then existed, and the soil to the extent of these ditches was generally abandoned as public footpaths, under which was, and is, conveyed the filth of large neighbourhoods. In other cases, the ditches being in the rear of the buildings, drains were made thereto, but in this case the ditches were left uncovered. I mention these facts particularly, as I shall presently have occasion to allude to them as a strong ground of complaint against the limited and perfectly inefficient powers of commissions to remedy such evils.

With reference to the subsequent argument, it may be well to state what would appear to have been the intention of the original appointment of such commissions to be gathered from the recital of all the old Acts of Parliament, viz., to drain low lands.

The commission alluded to as being requested to append a new district, have under their control a considerable district below high-water mark, many portions of which were constantly flooded. They some years since exercised scientific and sound principles by constructing large, deep, reservoir sewers, having their exit at dead low-water, protected by gates during the tide, and having a fall of two inches in a mile only to prevent the pressure of back water forcing itself up the drains communicating therewith. This effectually answered the purpose, not only of affording relief to house drainage, but also as draining the level. These sewers were after a time extended to outlying districts, which, partaking of rising ground, the sewers naturally were at a very considerable depth. Thus stood the matter when application was made to append this new district; the houses on the portion thereof from which the application originated being situated 2,500 feet apart; the hill water taking its course through the centre of a large open space, partially deposited in a pond, and eventually finding vent by an easy, tortuous, deep ditch to the low lands. I was startled by the proposition of the mode of affording relief to house drainage (the object of the application) by finding it was the intention to construct a sewer 15 feet deep in communication with a sewer 20 feet deep, to be driven through this pond to take the hill water from its natural easy course at an immense declivity, which may be imagined when I state, had it been constructed as a reservoir sewer with the little described fall, it would have been 50 feet deep at its termination. I then considered that no owners of houses distant 1,250 feet would attempt to avail themselves of the proffered relief, and the water, like that in an inclined bottle, would always be at the bottom, and certainly flood (at times of unusual high tides and extraordinary run of hill water) the basements of all houses which had drains communicating, the heads of which were below the level of the back water; and I was confirmed in this by finding, that since the described continuation of the reservoir sewers in low land, the level was no longer drained, and basements frequently had water, under extraordinary circumstances, thrown back upon them to the extent of 2 feet in depth.

I took the liberty of addressing the court, stating the thorough uselessness of such a sewer for the desired object, and that there was no reason why the hill water should be taken such a depth under ground.

I also stated my opinion that the vast expenditure in the district in deep sewers had been money thrown away, to the damage of the rate-payer.

I have great pleasure in acknowledging the courtesy with which my communications were received, and the ready facilities afforded me to assist in the inquiry.

I then, after investigation, and having by the direction of the court been furnished with all necessary levels, suggested the construction of a small sewer near the houses on either side the common, to meet at a point of junction below the pond, and thence to take the natural course, which I found had a fall at its junction with these proposed new sewers of 13 feet, which, crossing a high road, say 10 feet deep, could eventually have its vent into the Thames at a higher level, but a depth of 20 feet could never thus be diverted. I met, at first, with some considerable opposition, but the eventual result was my report being agreed to unanimously by the surveyors, and proposed by the court to be carried into effect.

I trust I shall have convinced your readers that, taking a rational course, commissioners of sewers are not such impracticable overbearing persons as they are frequently described; they can have no private object to serve, but I believe their powers are far too limited, and that we do not sufficiently and clearly define our wants. A sketch of the mode I would suggest I will, if acceptable, intrude on your columns at a future period.

Having put myself in communication with Mr. Chadwick, I have great pleasure in acknowledging the courtesy with which he has received it. Greenway Robins.

Peckham, 8th August, 1845.

THE COURSE OF STUDY IN THE SCHOOL OF DESIGN.

I observe that your correspondents are continually arraigning the methods of instruction adopted in the School of Design, conceiving that at the most they produce but inferior draughtsmen, while they leave the primary object of design entirely disregarded. Mr. Pugin has given up all hope of its producing any good, as there is not enough study of nature. Your correspondent last week finds fault with some of the finest inventions of the ancients; and those most modest remonstrators, the students, consider it utterly useless, as the directors do not adopt that course of study which they, in their wisdom, think fit to prescribe. But among them all, for my part, I have read no attempt to disclose a practicable remedy. Fixing the capacity to design as the object of his exertions, the individual must first learn to draw straight lines and curves of every dimension, and in every possible combination. He must proceed to copy forms of acknowledged beauty, the productions of men who have studied the beauties of nature and concentrated them in their works; which will form his taste, and enable him to perceive what it is that constitutes real beauty. He should then study nature, in order to enrich and vary his knowledge. He must observe and imitate the various turns and combinations of leaves; the different forms of bodies, and most particularly the beautiful composition and arrangement which she everywhere presents; and, lastly, he must continually, unceasingly exercise himself in the production of works from his own imagination. These, I humbly conceive, are the most obvious means to the end proposed. It is clear that no one can design till he can make lines to express his intention, and to my mind at least equally clear, that he should not study nature till (as artists say) his eye is formed. There are many humpbacked, crooked, ill-formed persons in life, but no one would wish them to be imitated; and this remark in a proportionate degree extends to all nature.*

Now, Sir, should you allow these theses to be true, allow me to apply them to the case in point. The professors of Somerset House first set a student to simple manipulation; they lead him on to the imitation of the best forms that can be procured, allow him the frequent review of beautiful designs of ornament, the loan of treatises on all the arts, and finally, to crown all, encourage him to design himself by the offer of prizes, and the great chance of employ by those gentlemen who offer them. This is at least my view of the case. If you deem this paper worth insertion, I hope these gentlemen will favour us with their remedy as an answer. I am, Sir, &c.,

Frith-street, Soho. J. Morgan.

Bedstead without Screws.—We have recently examined a contrivance by Messrs. Palmer and Stepney, carpenters, of Church-street, Camberwell, for putting together bedsteads without screws. A metal projection fastened into one part of the frame fits into a socket at the other, and one turn of the hand makes the juntion secure. It seems to us, from its simplicity and the saving of time effected by it, deserving of notice.

* Which proves that all nature is not fit for elementary study.

RAILWAY ACCIDENTS.

The occurrence of two or three railway accidents, either simultaneously or in rapid succession, frequently elicit valuable suggestions, and sometimes significant hints from those in authority. Such has been the case lately on the occasion of two great concussions in the neighbourhood of the metropolis, both of them originating in the purest negligence.

On the South-Eastern line, a train having been allowed to go away without its signal lights at the back, was in jeopardy from the possibility of an engine running into it; and an engine was accordingly sent off to realize the fear that was entertained. It is impossible to conceive any thing more grossly stupid than dispatching an engine at a rapid rate after a train which was only in danger from the chance of any thing coming behind it. Going away without the lights would have been, as it happened, of no consequence, for the train was the last for the day. It was only by dispatching a special engine, that mischief could be done.

On the London and Birmingham line, the morning was misty, and there was consequently more than ordinary danger in allowing the trains to be either later or earlier than usual. It was difficult to see further than a few yards; and by way of meeting the difficulty, the mail train was hurried forward till it came into violent collision with the luggage train. This, too, went out later than on ordinary occasions; though, as we have already said, the obscurity of the morning rendered exactness in all the arrangements on the line particularly requisite. Such are the usual causes of all railway accidents; for by a strange perverseness, whenever there seems to be a necessity for increased care, the persons employed on a line are guilty of increased negligence.

Mr. Bernal, a few evenings since, very properly called the attention of the House of Commons to the subject, when Sir G. Clerk observed: "that although the Board of Trade generally found that any suggestions they made were attended to by the companies, yet they had no power whatever to enforce compliance. It might certainly be hereafter necessay to impose some more efficient check on the railway companies for the prevention of accidents."

Sir Robert Peel also took occasion to say and with more than usual emphasis: "It is constantly urged that the accidents by railways bear no proportion whatever to those which used to occur by stage coaches. That is no answer—it is a mere sophistication. We have a right to be insured that those who derive the profits from these railways shall take every possible precaution on behalf of the public. If by the employment of ill-qualified subordinate officers these accidents are rendered more likely to happen or more frequent, then it will be the duty of Parliament to step in and demand a reduction of the profits of those who are concerned in the railway, in order that the due precautions may be taken to insure the public safety."

The Association of Architectural Draughtsmen.—At the last meeting of the Association, Mr. Colling read a paper upon the churches of Norfolk, pointing out their peculiarities: the subject was illustrated by many original sketches and drawings. Trunch, Ludham, and Knapton churches give ample scope for the research of the antiquary or architect. The roofs of several of the buildings noticed are well calculated to produce admiration, and the number and fidelity of their illustrations entitle Mr. Colling to praise for his industry. A proof of a lithograph of one of his quarterly subscription drawings was brought forward, to a copy of which each member is entitled. The Committee projects an exhibition of architectural drawings; if decided upon, it will open for a week upon the 1st September, the day of the *third* anniversary dinner.

The British Museum.—Last week the whole of the eastern wing of this building was disposed of by auction, in order to be removed for the erection of the new stone wing, to correspond with that on the western side, which is now finished. The foundation for the intended wing has been laid some weeks.

THE GLASS TRADE.

We receive many complaints of the conduct of the English glass makers in keeping the price of that material much higher than it should be. They may be assured that they are acting most unwisely; they will induce fresh competitors to come into the trade, and lead buyers to the foreign markets, whence they may not be able to wean them hereafter. The *Gardeners' Chronicle* invites attention to the fact, that an agency for the sale of foreign glass has actually been established in London, and that any quantity, from a single square up to as much as would glaze a village, may be procured by all purchasers. "We have examined that glass, and can say that it is excellent. It is as good in quality as English sheet glass, called the second quality of No. 1; and thus far better—that the English glass weighs only 16 ounces to the foot, while this glass averages 18 ounces, a very important difference.

As to the price, we find the difference to amount to this. We quote English prices from the tariff circulated by Messrs. Chater and Hayward.

	English glass 16 oz. to the foot.	Foreign glass 18 oz. to the foot.	Difference against the English glass, and in favour of the buyer of foreign glass.
6 by 4, and under 9 by 7	0s. 9d.	5d.	4d.
9 by 7, and under 12 by 10 ..	0 10	5	5
12 by 10, and under 24	1 1	5	8
24 to 36 inches.....	1 2	5	9

And if larger sizes are required, the only increase in price is 2d. a foot, up to the greatest dimension made abroad, which we believe is much beyond any thing that can be required for glazing purposes.

And here we see one of the most striking differences between the system of glass dealing in England and on the continent. An English glass-cutter tells you that he cannot cut you a square of glass 9½ inches long, and 7½ inches wide, unless you give him 1d. a foot more for it than if it is 9 inches long and 7 inches wide. He sets out by charging in the first place 9d. a foot for little pieces of glass worth 2d. or 3d. If half an inch is added he claps on a 1d. more, until you arrive at the magnificent dimensions of 12 inches one way and 10 the other; for that you must pay 3d. a foot more. And so he goes on adding 2d. a foot, till at last, by this ingenious manœuvre, he contrives to extract 2s. 3d. out of his customer's pocket, for that which is worth 3d.; or, taking his own exorbitant standard of value, he converts that which he admits to be worth only 9d. into 2s. 3d. Our calculating powers are unable to determine how many thousands per cent. are pocketed by this scheme. That it is a mere scheme of trade is quite clear from the foreign practice. Messrs. Testa and Co. publicly advertized, that if their glass is under 40 inches long, they must have 14 francs *per* 100 *feet*, and if it is more than 40 inches long they must have 17 francs *per* 100 *feet*. This is a very reasonable advance, the necessity for which is intelligible. But the English glass trade say that they must have from 1d. to 3s. *a foot* extra. So that an English glass-dealer requires a greater advance upon a single foot of glass than a foreign dealer finds it necessary upon 100 feet."

Ordinary English glass can be had cheaper than is stated above, but not so cheaply as it should be, and as manufacturers would find it to their interest to make it.

St. Peter's at Rome.—We learn from *Golignani* that the dome of this celebrated edifice has excited serious alarm. For a long time past, the cupola has been cracked in many places, and ten arches of iron, weighing 60,000 kilogrammes, have been placed so as to prevent its fall. It has just been discovered that the lanternino, above which rises the cross that crowns the edifice, is cracked through and through. The numerous lightning conductors, which had been erected by Pope Pius VII. for the protection of the edifice, remove all idea of this mischief having been the effect of a thunder-storm. The lanternino is being surrounded by heavy iron chains, to prevent the cracks from extending.

Correspondence.

THE NEW DOORS FOR YORK MINSTER.

Sir,—In your valuable publication of the 15th July, I observed a letter from Mr. F. Tyrrell, of Tynemouth, near Newcastle, relative to the execution of three new doors for the west front of York Minster. Mr. Tyrrell is strictly correct in stating that the doors were originally made by Messrs. Scott and Wallace, of Newcastle. He says he considers it is only justice to name by whom the work was executed. I quite coincide in this opinion, but at the same time beg to state that when the doors arrived at York Minster, they were minutely inspected by Mr. Sydney Smirke, the architect for the restoration of the nave, and that that gentleman then distinctly declared "that he could not sanction the execution of the carving," and ordered Messrs. Scott and Wallace to take it all off the doors, and replace it by some other carving of superior quality. The contractors reluctantly renewed the carving, but only upon the lower part of the doors, where it now remains for the inspection of the curious; and they having subsequently refused to renew the carving upon the upper part of the doors, Mr. S. Smirke contracted with two of my fellow-citizens, viz., Mr. John Wolstenholme, to renew the said carving, and Mr. George Coates, the joiner's work, the expense of which was deducted from Messrs. Scott and Wallace's amount of contract. The doors were again inspected by Mr. S. Smirke, and ordered to be fixed forthwith; the original carving was then carefully packed up, "and sent to the place from whence it came."

The above are "stubborn facts," and as a convincing proof of the great superiority of the work executed by Messrs. Wolstenholme and Coates, the very rev. the dean and chapter have intrusted the execution of the new doors for the north-west tower to their care. The door is nearly finished, and will be fixed during the present month, when the public will be enabled to decide upon the merits or demerits of the respective works.

Justice demands the above explanation; and as you are a consistent enemy of trickery, and a staunch advocate of fairplay, I hope you will have the goodness to insert this letter in an early number of The Builder. — I am, Sir, &c. A Constant Reader.

York, Aug. 4, 1845.

BUILDERS' ESTIMATES.—CHARITY SCHOOLS OF ST. GILES' AND BLOOMBURY.

Sir,—My attention has been called to a letter in The Builder of Saturday last, signed "J. S., Junr." (page 383), respecting a contract for some works now being performed at the School House of the Charity Schools of St. Giles' in the Fields and St. George Bloomsbury. I am surprised that the writer should have sent such a letter for the sole purpose, as it appears to me, of imputing to the committee of trustees of that charity, and to the architect (also a trustee, and a gentleman, who has for many years given his valuable and gratuitous services to the charity, both professionally and in other ways), improper motives in selecting the tender referred to. The facts are these; tenders were applied for to various parties, all, I believe, subscribers to the charity, for the works required; and the builders were requested to state separately the cost of the bricklayer's, carpenter's, and plasterer's works, and the cost of the painting. There were six tenders, as follows:—

				Brick-layers, &c.			Paint-ing, &c.
A	£132	0	viz.	£80	0	and	£52 0
B (your correspondent)	136	0	,,	72	0	,,	64 0
C	160	0	,,	115	0	,,	45 0
D	135	14	,,	91	10	,,	44 4
E	99	5	,,	75	15	,,	23 10
F	,,		,,	,,		,,	39 0
G	99	0	,,	73	0	,,	26 0

The committee unanimously agreed to accept G's tender for all the works. Your correspondent, B, complains that the committee ought to have accepted his tender for bricklayers works &c., 72*l.*, as being 1*l.* under G's for that portion of the works, and E's tender of 23*l.* 10s., for painting, which together would have been 3*l.* 10s. under G's total. The trustees thought that under all circumstances it would be better to accept G's tender, that it would be inconvenient to have two sets of workmen, and that the difference of 3*l.* 10s. was too slight a set-off on that account.

In consequence of this decision, your correspondent got a special meeting called (a very unusual thing) of the trustees. They assembled in a large number. A motion was made by A, one of the parties who had tendered, and a relative of B, that B's view should be adopted; but, after some discussion, the trustees present expressed so distinctly their conviction that the decision of the committee was a correct one, that A requested permission to withdraw his motion, which was granted, and I thought the matter had then been settled, until THE BUILDER was this morning put into my hands. I should mention that E, whose tender for painting was a little lower than G's, declined to execute the painter's work only, so that the committee could not have done what B wished.

I am sorry that B's disappointment has induced him to act as he has. He should remember that his tender for this trifling amount of work for the charity, exceeded the tender accepted by 37*l.*! He had the decision reviewed by the trustees, and now in your largely circulated publication charges the committee with unfairness, and infers that the architect recommended G's tender to be accepted, because he was "one of his own neighbours." When G's tender was accepted, the architect asked me who he was; for although certainly "one of his own neighbours," he did not previously know him.

I cannot imagine that the loss of this small contract is of any importance to your correspondent, but this I do know, that he has no ground for the complaint he makes against the committee of trustees of this charity, who, with other trustees, devote much time and attention to forward the objects of the very important and useful charity to which they are also subscribers. I am, Sir, &c.,

Aug. 11, 1845. A TRUSTEE.

*** The name of the architect referred to, which we have just now learnt, is an ample assurance to us, that whether the decision was the right one or not, it was not influenced by any motive contrary to the *strictest* integrity and honour.

Miscellanea.

THE GRAVE OF SIR WALTER SCOTT—We are happy to learn that a monument at Dryburgh Abbey, to the memory of Sir Walter Scott, will be immediately commenced. Various obstructions and delays have occurred to interfere with this pious and patriotic duty, contemplated shortly after the death of the great minstrel. Sir Francis Chantrey had promised a design, but died ere he carried his intention into effect. Mr. Allan Cunningham, the friend and assistant of Chantrey, knowing what was proposed, drew a sketch of a monument; and it is a melancholy and interesting fact, that the last letter ever penned by "honest Allan" was one transmitting this sketch to Mr. Cadell, Edinburgh. The same day that he sent off his design for the tomb of Scott, Mr. Cunningham suddenly died, and followed his illustrious friends, the poet and and sculptor, to the grave. After a delay of thirteen years, the original object, however, will be attained, and beautiful as is the poet's tomb in St. Mary's Isle (where nature has decorated the Gothic ruins with a profuse and picturesque variety of foliage, and the murmurs of the Tweed are heard in the distance), the spot will be rendered still more impressive by this external commemoration, the offering of gratitude and affection, combined with those higher and more solemn feelings which consecrate the grave of genius.—*Inverness Courier.*

NASMYTH'S STEAM HAMMER.—It appears that a patent for an invention similar to the above was granted so long ago as the year 1806. In the "Repertory of Arts," vol. ix., second series, p. 387, the specification is given at length. The patent was granted to William Deverell, of Charles-street, Blackfriars-road, for "certain improvements in the mode of giving motion to hammers, stampers, knives, shears, and other things, without the application of wheel, pinion, or any rotative motion, by means of various powers now in common use." It does not however appear that Mr. Deverell, contemplated the application of his invention to the driving of piles.

ARCHITECTURE IN PARIS.—The *Art-Union* remarks that the prevalent taste in the architectural improvements of Paris may be said to resolve itself into very opposite styles—that of the twelfth and thirteenth centuries on the one side, and on the other that of the Renaissance; both of which being carried to extremity—forcibly, on the one hand, revert to a period of barbaric art; and on the other to the character of a time which, with our best efforts at progress, we have not yet been able to rival. We have from time to time noticed the progress of the works in the churches of Paris, and described those of St. Germain des Pres, St. Germain l'Auxerrois, of St. Denis, and others. The whole of the interior decorations of some of these are variously painted —flowers and foliage are represented on the shafts of the pillars; and all the superior embellishments, statues, painted glass, and other paintings are in the style of the twelfth and thirteenth centuries. Notwithstanding the yet effective taste for antique architecture, it is yet surprising that in Paris such a feeling should have arisen, where, in the memory of those professing such taste, nothing but pagan art was taught. This is, however, one of those extremes of which we have here so many examples—equally in things great and small. It is an excess of that principle which maintains the supremacy of early art. Among the architects whose works are most conspicuous in Paris are M. Gau and M. Hittorf, both of whom are natives of Cologne, but Parisians by education. The predilection of the former is strongly in favour of the architecture of the middle ages. It is to him that the erection of the new church in the vicinity of the Invalides is confided. This work is not yet commenced; the plans, however, are prepared. The position, on the contrary, assumed by M. Hittorf is more favourable: his name is connected with many of the most considerable architectural projects in Paris. A great part of the Place de la Concorde was planned and executed by him—he designed the candelabra here, and the fountains; also the elegant fountains in the Champs Elysées; he built the Cirque Olympique, besides numerous other edifices, domestic and otherwise. If evidence of his powers on a grander scale be demanded, it is only necessary to turn to the church of St. Vincent de Paul, which in 1824 was commenced, according to the ground plan of Lepere, but continued and finished for the most part by Hittorf, who has conducted the work since 1831.

REPARATION OF SEPULCHRAL MONUMENTS.—The little church of Greatham, near Petersfield, whose lofty wooden porch, with its carved gable-board and crowning canopy of ivy, attracts the attention of the traveller on the Farnham road, has recently been much improved in its interior by the renovation of the pews on the south side of the aisle, at the expense of their respective owners, and of the parish, in conformity with those on the north side, similarly repaired about ten years ago; and the tomb and recumbent effigy of Dame Caryll, lady of the manor temp. Chas. I., has been restored at the expense of Francis Love Beckford, Esq., as her ladyship's representative, although he possesses no property in the parish, nor, it is believed, in the county. The restoration of the above handsome monument was entrusted to Mr. Ubsdell, of Portsmouth, artist, who, having caused the alabaster and black marble to be cleansed, repainted the parts which had been originally coloured, applying ultra-marine and vermilion, so as effectually to resuscitate the gorgeous hues of former ages. It is to be hoped that the liberal example of Mr. Beckford will not be without its imitators, while such specimens of ancient art, mementos of human mortality and affection, and (where they speak sober truth) records of Christian virtue, may form integral portions of the decorations of churches; but, at the same time, the writer of this notice avows his opinion, generally that, except perhaps in large cathedrals, and even there he questions their propriety, the space monopolised by these erections were more suitably occupied by accommodation for living worshippers of God.—*Hampshire Chronicle.*

NEW CHURCH AT PRESTON.—A new church is being built at Preston, the fund for erecting which is being raised by penny-a-week subscriptions; 600*l.* has thus been obtained, and more is expected from the same means.

MONUMENT TO THE BROTHERS OF FATHER MATHEW.—A monument has just been executed in Tipperary to the memory of Francis and Thomas Mathew, Esqrs., brothers of the Rev. Theobald Mathew, from the design of Mr. James K. Fahie, of that place. It is composed of a dove-coloured magnesian limestone. The plan is rectangular. The opening forms three fronts, each bearing a tablet for inscription, surmounted by three trifoliated depressed carved arches; there are numerous buttresses, and crocketted pinnacles, terminated by carved finials. In the centre stands a square pedestal, on which is to rest a bust of the Rev. Theobald Mathew, covered by a projecting octagonal canopy. The whole is surmounted by a wrought Gothic cross; the extreme width is 15 ft. 3 in., and height from the floor 24 feet.

Tenders.

For rebuilding the house, No. 104, Oxford-street, under Mr. Lockyer.

Unwin....	£2,380	Plumber	£147
Stevenson..	2,222	,, ...	135
Matthews..	1,996	,, ...	136
Trego	1,895	,, ...	75

For rebuilding the Star Brewery, Oxford-street: Mr. R. H. Abraham, architect.

Furnival.....	£2,848
Lawrence and Son.....	2,818
Howard and Nixon	2,786
Stevenson	2,780
Jay.....	2,440

NOTICES OF CONTRACTS.

[We are compelled by the interference of the Stamp Office to omit the names of the parties to whom tenders, &c., are to be addressed. For the convenience of our readers, however, they are entered in a book, and may be seen on application at the office of "The Builder," 2, York-street, Covent-garden.]

For the complete restoration of two Windows on the south-side of St. Thomas's Church, Salisbury; also, for Cleaning and Whitewashing the interior of the same Church.

For the execution of Works on the Leeds and Thirsk Railway.

For Coupled Locomotive Engine and four-wheeled Tender, to contain 700 gallons, for the Manchester and Birmingham Railway Company.

For the execution of several lengths of Earthwork on the Aberdeen Railway. There are 5 separate Contracts, varying in lengths from 3½ miles to 4¾ miles.

For the supply of 70,000 Larch, Oak, or Fir Sleepers, and Fencing for 50½ miles, or any part thereof, for the Ipswich and Bury St. Edmund's Railway Company.

For the erection of a Wesleyan Proprietary College at Taunton.

For the erection of a new Village Infirmary at Brampton, near Huntingdon, for the Lady Olivia Sparrow.

For the Construction of the Gas Works at Wells, in the county of Norfolk, with all necessary apparatus.

For a supply of eighty fathoms of Yellow Deal Ends and Boards, in equal proportions, of the best description, to the Trustees of the Parish of Islington, Middlesex.

For the execution of the works on the Nottingham and Lincoln Railway, in two parts; 1 from Nottingham to Newark, being a distance of 17¼ miles. 2 from Newark to Lincoln, being a distance of 15¾ miles.

For the construction of the entire Line of Railway through the County of Anglesea, for the Chester and Holyhead Railway Company. It is divided into four separate Contracts, being respectively in length 5 miles and 28 chains, 5 miles and 26 chains, 7 miles and 55 chains, and 3 miles and 60 chains.

For supplying her Majesty's several Dockyards with 11,000 loads of African Timber.

For the Buildings intended to be erected at King's Langley, for the Committee of the Booksellers' Provident Institution.

For the taking down the present parochial school-house at Bethnal-green, and erecting a new one on the same site.

For the supply of about 18,000 sleepers for the Canterbury Branch of the South-Eastern Railway.

APPROACHING SALES OF WOOD, &c.

BY TENDER.

In the Plantations of the Duke of Montrose, situate in the Parishes of Drymen and Buchanan, Stirlingshire: many Thousands of Larch Trees of some size, adapted for Railway Sleepers, Roofing and Joisting, and other purposes.

COMPETITIONS.

The Committee for the establishment of Public Parks, Walks, &c., at Manchester, offer two prizes, one of 50 guineas and the other of 25 guineas, for the best and second best set of Plans (with estimates), for the laying out, &c., of the sites already purchased by them.

The Board of Guardians of the Bridlington Union offer a premium of 10*l.* for a Plan and Specification of a Workhouse, the expense of which is not to exceed 2,000*l.*, and to accommodate 150 inmates.

TO CORRESPONDENTS.

"Wood Models."—*The correspondent who inquired as to architectural models last week, is referred to Mr. Smith, of 49, Millbank-street, Westminster.*

"An Old Subscriber."—*We have no doubt our correspondent can build over the passage without making the walls thicker, but the information sent is not sufficient for us to reply with certainty.*

"Subscriber" (Kensington.)—*The structure in question could not easily have been made uglier. Its utility is unquestionable.*

"A Builder" (Clapham).—*If the houses were commenced before January 1st and shops are part of the original design, notice need not be given to the district surveyor.*

"S. C. Fripp" (Architect.)—*The Glasgow Improvement Act, better known as the Glasgow Consolidation Act, stands cap. 99, 6th and 7th of Victoria.*

"Constant Reader."—*An edition of Bushell's price-book has not appeared since* 1816. *A similar work by Elsam has been published since, price 8s. Apply to Weale, of Holborn.*

"Cast Steel Bars instead of Bells."—*Another correspondent desires to know where cast steel bars can be obtained, and how they are to be struck.*

"J. I." (Kennington Common.)—*The district surveyor was authorized to interfere.*

"The District Surveyors."—*We cannot insert charges of improper behaviour or complaints, unless accompanied by the name of the writer, not necessarily for publication, but as a guarantee of their correctness.*

"R. G." *shall not be lost sight of.*

"J. L." *has our thanks.*

"Veritas."—*We are sorry we have not space for his letter.*

"A Young Bricklayer."—*Read Mr. Hosking's treatise on "Building," published by Longman.*

"U. S." (Clerkenwell).—*We shall be glad to see a specimen, and might then offer terms.*

"Friend to the Builder," *next week.*

"An Architect" (Leamington).— *The design shall be engraved.*

Received:—"A Constant Subscriber" (re curves); "Juvenis;" "W. F. S.;" "Quirk;" "Proceedings of Civil Engineers."

ADVERTISEMENTS.

TO CAPITALISTS.

REQUIRED, a GUARANTEE for 10,000*l.* in one or more sums, as part security to a Contractor for the Erection of a Splendid Building in London for a highly-patronized and well-understood purpose. The Guarantee will not be liable until the expiration of two years from the completion of the building, and it will be satisfactorily shewn, that the liability will be cancelled in one year. The Guarantee will have a security upon the building, and highly advantageous terms will be given.—Address W. W., 8, St. James's-square.

SNOXELL'S PATENT REVOLVING WOOD SHUTTERS.

WM. SNOXELL, 96, Regent-street, and 131, Chancery-lane. These Shutters combine Economy with perfect Security, having the edges sheathed with iron; the cost little more than common shutters, and of such simple construction, that the largest establishments can be opened or closed in a few moments with the greatest possible ease without the use of machinery. One great advantage over all other revolving shutters consists in their being made without metal hinges, consequently cannot rust or get out of order.—Highly satisfactory references of their utility can be given to establishments where they are now in use.

PATENT OFFICE, 5, CHANCERY-LANE, NEAR FLEET-STREET.

INVENTORS requiring protection by LETTERS PATENT should apply direct to the PATENT OFFICE, as above, where Patents can be speedily procured for the United Kingdom, &c., and by which a great saving of expense will be effected. CAVEATS are entered at this office, fee 1*l.* 1*s.* DESIGNS of all kinds are REGISTERED. Apply at the PATENT OFFICE, 5, Chancery-lane, near Fleet-street.

PRIZES IMPORTANT TO INVENTORS AND PATENTEES.

A GOLD MEDAL, value 100*l.* and a SILVER MEDAL, value 50*l.*, will be given by Mr. M. JOSCELIN COOKE. The Gold medal for the best Patent, and the Silver medal for the best Design taken out or Registered at the OFFICE for PATENTS and DESIGNS, 20, Half-Moon-street, between the 1st of November, 1844, and the 1st of June, 1846. The Prizes will be awarded by competent judges on the 10th June, 1846. The conditions to be observed, together with instructions, charges, and every information for obtaining Patents in England or Foreign Countries, or Registering Designs, will be forwarded gratis, on application to Mr. M. JOSCELIN COOKE, at the Office for Patents and Registration of Designs, 20, Half-Moon-street, Piccadilly, London.

NOTICE TO INVENTORS.

OFFICE FOR PATENTS OF INVENTIONS and REGISTRATIONS of DESIGNS, 14, Lincoln's-inn-fields.—The printed INSTRUCTIONS gratis, and every information upon the subject of PROTECTION for INVENTIONS, either by Letters Patent or the Design Acts, may be had by applying personally, or by letter, prepaid, to Mr. ALEXANDER PRINCE, at the office, 14, Lincoln's-inn-fields.

HOT WATER APPARATUS. — The attention of architects, builders, and others, is respectfully requested to BENJAMIN FOWLER'S superior method of heating churches and chapels, halls, stair-cases, conservatories, forcing and green-houses, manufactories, and warehouses, kilns, rooms for drying timber, &c., and every variety of purpose for which artificial heat is required. Within the last twenty years some hundreds of buildings have been heated upon this plan, and the parties for whom they were executed are constantly expressing their satisfaction, also their willingness to vouch for their efficiency. An improved wrought-iron boiler, which requires no brickwork, may be seen in action upon the premises. BENJAMIN FOWLER, 63, Dorset-street, Fleet-street.

POLONCEAU'S BITUMEN PAVEMENT for paving Foot walks, Terraces, Garden walks, Stables, Coach Houses, Granaries, Corn Stores, and Salt Warehouses. For the exclusion of Damp and Vermin in Basements it is particularly adapted, and for Roofing Dwelling Houses, Porticos, Balconies, and Sheds.

Price 3*s.* 6*d.* per square yard.

BITUMEN for covering the Arches of Bridges, Culverts, &c. &c. on Railways and other places (with instructions for laying it down), may be had at the rate of 45*s.* per ton, by applying to JOHN PILKINGTON, 15, Wharf-road, City-road.

TO ARCHITECTS.

IN consequence of many complaints having been made to the Company, by Architects, of a spurious material having been used in the execution of Works where the SEYSSEL ASPHALTE had been specified for, the Directors, with a view to ensure the fulfilment of any such specification, have authorized CERTIFICATES to be granted to Builders where the

SEYSSEL ASPHALTE

has been used. For the purpose of securing the use of the Genuine Article, Architects and others are recommended to insert in their specifications the "Seyssel Alphalte, Claridge's Patent," and not merely "Asphalte," or "Bitumen," as in many cases where these terms have been used, gas-tar and other worthless and offensive compositions have been introduced.

I. FARRELL, Secretary,
Stangate, near Westminster Bridge, Jan., 1845. Seyssel Asphalte Company.

Books of Instructions for Use may be had at the Office of "The Builder," and of all Booksellers in Town and Country, price 1*s.*

*** In proof of the necessity of the above advertisement, it may be mentioned, that it has come to the knowledge of the Directors, that in certain works which have been executed by Messrs. CURTIS, builders, of Stratford, a spurious material has been used by them, contrary to the specifications, which expressly mentioned, that "Claridge's Asphalte" was to be used.

Also in the case of a work at Lewisham executed by Messrs. ROBERT and DANIEL YOUNG, of 10, Crown-row, Walworth-road, where Seyssel Asphalte was specified for, a spurious article was nevertheless laid down by them.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

THE COMMISSIONERS of SEWERS for the LIMITS give NOTICE, that their Office, Hatton Garden, is open daily between the hours of Ten and Four, where information can be obtained (gratis) by persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above Office.

By the Court,
STABLE and LUSH, Clerks.

COURT OF SEWERS FOR WESTMINSTER, AND PART OF MIDDLESEX, No. 1, Greek-street, Soho-square.

TO BUILDERS and Others interested in buildings or in ground for building upon, within the district under the jurisdiction of this Court, drained by watercourses falling into the river Thames, between the city of London and the parish of Fulham.

The Commissioners hereby give notice, that by an Act of the 47th Geo. III. (chap. 7, local) it is required that, previously to the making of any new sewer in any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry or drain off water from any house, building, yard, or ground, into any sewer under their management, or within their jurisdiction, a notice in writing shall be given to them, or to their clerk at their office, and that such new sewer or sewers shall be constructed and made in such manner and form as shall be directed by the said Commissioners, and not otherwise.

And, in order to prevent the serious evils and inconveniences that must arise from ground proposed to be built upon being excavated at too great a depth, the Commissioners have directed that, upon application being made at this office previously to the excavation of such ground, information shall be given as to the lowest depth at which the same can be drained.

And the Commissioners do also give notice that, whenever the lower floors or pavements of buildings shall have been laid so low as not to admit of their being drained with a proper current, they will not allow any sewers, or drains into sewers, to be made for the service of such buildings.

It is recommended to all persons about to purchase or take houses, or other premises, to ascertain whether such premises have separate and distinct drains into common sewers.

All petitions must be delivered at this office at least three clear days before they are presented to the Commissioners; and all such petitions will be called on in the order of their application, and the name of any party not present when called on to support the application will be struck out, and the proceedings must in consequence be commenced de novo.

All communications made with any sewer without leave of the Commissioners will be cut off, and the parties making the same will subject themselves to a fine.

The provisions of the Metropolitan Buildings Act (7 and 8 Victoria, c. 84) do not supersede the authority of the Commissioners of Sewers in the above respects, but their powers are expressly reserved, and their regulations made subservient to the purposes of that Act. The execution of such works, under the superintendence of the district surveyor alone, cannot therefore warrant the making of any sewers or drains within this commission, nor relieve the parties making them from the penalties above mentioned.

By order of the Court,
LEWIS C. HERTSLET, Clerk.

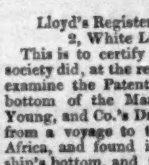
R. W. PIPES.

MESSRS. NEILSON and MITCHELL beg to inform Builders that they have always on hand, at their premises, 15, Wharf-road, City-road, a large assortment of R. W. Pipes, Guttering, Sash-weights, &c., which they are disposing of at very low prices.

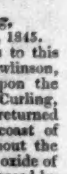
Castings of every description done to order.

BALLUSTERS.

TO ARCHITECTS AND BUILDERS.



The PATENT ALBERT WEATHER-BAR for simplicity and effect supersedes any thing of the kind yet offered to the public. The expense varies from 18*s.* to 25*s.* Invented and manufactured by T. WILKINSON and Co., Ironmongers, 77, Regent-quadrant. T. W. also executes all kinds of Iron-works, Staircases, Warming by Hot-water, Fitting up Stoves and Ranges of all kinds; also Bell-hanging extensively executed. Estimates given.



CAUTION.—In the Case of CHUBB *v.* COOPER and Another. The Court of Chancery, on April 22nd, 1842, decided that it is illegal for any person or persons to stamp, engrave, or in any manner put our Name or Trade Marks (either by themselves or in conjunction with any other Words or marks) on any description of Locks or Keys whatever, and that all persons Making or Selling Locks and Keys so marked subject themselves to legal proceedings: and upon the trial of the cause, CHUBB *v.* DAVIS, in the Sheriff's Court, Birmingham, on the 17th April, 1844, the jury found a Verdict for the Plaintiffs, with 50*l.* Damages for the illegal use of the plaintiffs' name and trade marks upon locks not of their manufacture.—CHARLES CHUBB and SON.

N.B. The Trade are respectfully informed that C. CHUBB and SON have on sale every description of their New Patent Detector Locks and Latches.—Lists of Prices may be had on application, 57, St. Paul's churchyard.

PORTER'S GALVANIZED CORRUGATED and PLAIN IRON ROOFING, and IRON HURDLE and FENCE WORKS, Grove, Southwark.—The Patent Galvanized Iron Co. (Sorel's) process is now being used for the roofing of the new Houses of Parliament, at Woolwich Dock-yard, by the Trinity Board, &c. It is particularly suited for the colonies, and is shipped by J. Porter to the East and West Indies, Ceylon, &c.; also supplied by him to several English, and to the Jamaica Railway Co.'s. Moveable Feeding Sheds and Pens; farm-yard and fire-proof buildings of all kinds; a new description of Galvanized Iron Open Gutter, covered with tile for the circulation of hot water, much cheaper than any other kind. The Trade supplied with Corrugated Plates, Galvanized or not, and with Iron Fences of all kinds.

PATENT GALVANISED IRON, 100 PER CENT. STRONGER and from 200 to 300 PER CENT. CHEAPER than COPPER. The Patent Galvanised Iron Company are ready to Galvanise any Iron sent to their Works, either at Millwall, London; Phœnix Iron Works, West Bromwich; Lea Brook, Tipton, Staffordshire; or Broad-street, Birmingham, and to supply Roofing, Ship Sheathing, Fastenings, Chains, Bolts, Nails, Screws, Pumps, and the endless variety of articles to which Iron, not subject to rust, may be applied. The Patent Galvanized Iron is well adapted for Roofing, especially for Tropical Climates, being cheaper and more durable than Zinc, Lead, Tin, or any other material, calculating weight, strength, eleganee, and durability; Sheathing Ships, being not more subject to clog by barnicles, sea-weed, or oxidation than any other Sheathing; Bolts, Chains, and all Iron Work about Ships, Boats, and Steam Vessels, Miner's Implements, Agricultural and Ornamental Fencing, Rick Covers, &c. The validity of the patent was contested in February last before Lord Chief Justice Tindal, when among others the following eminent gentlemen gave evidence:—Charles Barry, Esq., F.R.S., architect, "that he is roofing the new Houses of Parliament with the Patent Galvanised Iron, and is perfectly satisfied with it." Oliver Lang, Esq., master shipwright at Woolwich dock, on whose recommendation the Admiralty have ordered H.M. steamer Sphinx, about to be built by him, to be wholly bolted and fastened with Galvanised Iron. Captain Paulter, resident superintendent of the Trinity Board Establishment, "that it is employed by the Trinity Board for their buoys, &c., and found to be perfectly effective in protecting the iron from injury at sea, the buoys retaining their colour, a point never before attained." Captain Denison, Royal Engineer, superintendent of all buildings in Woolwich and Deptford dockyards, T. H. Brande, Esq., F.R.S., Professor of Chemistry, &c., George Frederick Young, Esq., of the firm of Curling, Young, and Co., all deposed in the strongest manner to the perfect efficacy of the Company's patent process for the preservation of iron from rust. Amongst other testimonials the following certificate has been received from Lloyd's surveyors.

(Copy.)

Lloyd's Register of British and Foreign Shipping,
2, White Lion Court, Cornhill, February 7, 1845.

This is to certify that the undersigned surveyors to this society did, at the request of Messrs. Malins and Rawlinson, examine the Patent Galvanised Iron Sheathing upon the bottom of the Mary Stewart lying at Messrs. Curling, Young, and Co.'s Dry Dock, Limehouse, and lately returned from a voyage to the Island of Ichaboe, on the coast of Africa, and found it unbroken and perfect throughout the ship's bottom, and no appearance of corrosion, or oxide of iron upon its surface. The iron that had been exposed by puncturing the nail holes had become coated with zinc; the sheathing was nearly clean and free from marine grass and animalculæ. It appears to have answered very well during the before-mentioned voyage, and the ship has sailed without its being found necessary to do any repairs to it.

PETER COURTENAY,
J. H. RICHIR,
JAMES MARTIN, } Lloyd's Surveyors.

Agents—Liverpool, John Hamilton, Jun., Esq.; Plymouth, Fox, Sons, and Co.; Falmouth, G. C. and R. W. Fox and Co.; Bristol, Morgan M'Arthur and Co.; Gloucester, Cook and Butt; Bremen, Widow J. Lang, Son, and Co.; Hamburgh, Higson, Brockman, and Co.; Venice, F. Zuchelli, Esq.; Antwerp, W. Turner, Jun., Esq.